I Build Worlds

Module 1

Brief and Breakdown

Our brief is very simple – to design and develop an original concept for a gameworld that uses environmental storytelling to explain the disappearance of its inhabitants. This sounds simple, but without the use of dialogue, telling an engaging story becomes a lot harder. How do I exposite? How do I tell a story without its inhabitants? These were questions at the forefront of my mind at the beginning of this project. So I broke the brief down into pieces to see if I could give myself some ideas.

"Design and develop an original concept for a gameworld that uses environmental storytelling to explain the disappearance of its inhabitants."

- original concept → What constitutes originality?
- gameworld → What is a gameworld? How do I define that?
- environmental storytelling → What is environmental storytelling? Where can I find examples of this?
- explain the disappearance of its inhabitants. → Why have they disappeared? What causes a place to be abandoned?

Further criteria include:

- The world must be devoid of humans and humanoid creatures
- Dialogue must be limited
- The "win state" must be that where the player finds out what happened to the inhabitants

Admittedly, telling a story without humans OR dialogue does not personally intrigue me that much, and my immediate first thought was asking myself how I can loophole a way out of it. For example, I could show the disappearance of humans without ever having to show a human – thereby the inhabitants have both disappeared, and the world is devoid of humans/humanoid creatures. Technically, this breaks no rules. However, I will also try to come up with some other concepts, though if I am gunning for originality I ought to stray away from aliens and robots.

Deliverables:

- One game created in Bitsy, uploaded to Itch
- One game created in Twine, uploaded to Itch
- A portfolio of research and idea development
- A selection of pixel art
- 5 slides to share your world with the group

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Types of Research

1. **Desk-Based Research**
    a. Desk-based research consists of research you can largely do at a desk, and as such is secondary research – gathering others, pre-existing findings rather than conducting your own research; nevertheless it is equally as important to see what others have found as much as gathering evidence yourself.
        i. Examples of desk-based research includes, but is not limited to: academic articles, books, magazines, films, documentaries, search engines, online archives, social media, digital maps, videogames
2. **Field Research**
    a. Field-based research consists of the researcher going out to specific places to analyse and glean information – for this reason, it is Primary research. It is more difficult than desk-based, because it does require a different level of effort and travel, however it is still important to do wherever necessary.
        i. Examples of field research includes, but is not limited to: site visits; galleries; museums; interviews; surveys,;ethnographic observations; experiments; participatory research.
3. **User Research**
    a. User research consists of consuming media in a critical and analytical way. For videogames this means exploring mechanics and observing how rulesets set the boundaries of and interconnect the game, testing its limitations and learning from the art. It is a primary research.
        i. Examples of user research includes, but is not limited to: playtesting; user observation; limit testing; QA testing.
4. **Market Research**
    a. Market research consists of research in people's preferences and behaviours, and can be either primary or secondary research depending on the method.
        i. Examples of market research includes, but is not limited to: consumer demographics, needs, and preferences; sales figures; industry statistics; platform data
5. **Arts-Based Research**
    a. Arts-based research consists of practising art to explore concepts, encouraging unlimited creativity to help the researcher understand what works, and what will not work, for their project. It is a primary research.
        i. Arts-based research includes, but is not limited to: exploring a topic or idea using artistic tools and practices; narrative inquiry, ekphrasis; performance; poetry; collages; remixes and mashups.

QUANTITATIVE VS. QUALITATIVE RESEARCH:

Quantitative research emphasises on text and visual data. It is concerned with questions like how many and how much, instead of the how and the why.

Qualitative research emphasises on interviews and observations, exploring depth and complexity. It is concerned with questions like how and why, instead of how many and how much.

Reading Notes: Weeks 1-3

Week 1
AN EDUCATION IN GAMES DESIGN

"The Videogame Industry Does Not Exist: Why We Should Think Beyond Commercial Game Production" by Brendan Keogh (Ch.4).

It is only relatively recently that the videogame industry has "professionalised"; before one could become a game dev through any number of pathways. Since the early 2000s, production is in need of a constant supply of labour now, and now the industry is informalising again and multiple pathways are opening up, is there any point to offering Games Design as an education? Especially now as the industry is oversaturated, with few jobs to offer?

Personally, I found the entire paper very demeaning and disheartening, and was very surprised to find that most people didn't feel the same way. The tone felt smug, and besides, University is predatory and expensive enough on young people. The "we don't owe you a job, be grateful to study videogames" tone was very irritating to me.

At the very end they argue about the ethics of offering a videogame course with limited jobs, citing that poetry classes are still offered despite there being no poetry jobs; the art itself should be enough. I don't argue that Games Design isn't worthy of being studied. However the people taking poetry probably aren't under a notion that they'll get a job out of it. People who take Games Design are. *I* was. And they illustrate so many times how poorly people understand the industry (that there "is no" industry) that they must KNOW this. It feels more like a slap in the face than reassurance.

"How To Make Small, Good Games" by John Thyer

1. The quality of a game isn't dependant on its scale
2. The quality of a game isn't dependant on its emotion
3. A game defines the term of its own success
4. A game fulfills its promises to succeed
5. Smaller promises make a game's success easier
6. Fulfill promises in an interesting and delightful way
7. Don't over-deliver
8. The appearance is part of the promise
9. Finish a game before releasing it
10. Serial games are not a shortcut
11. It's not a popularity contest
12. Good is good enough.
13. Have fun :)

Week 2
WORLDBUILDING IN GAMES

"Collaborative Worldbuilding for Videogames" by Kaitlin Trembley (Ch. 2).

Narrative:
Everything in the game should reflect the narrative and the lore. Descriptions go a long way to worldbuilding + culture: collectibles, audio logs, video logs + their presentation, naming conventions, weapons/magic, neologisms, and DIALOGUE!!

Gameplay:
Systems, mechanics, verbs, quests, level design, enemies and creatures are all gameplay aspects that contribute to the overall world. Systems and mechanics are particularly underrated.

Art:
Determines the atmosphere of the world. Should reflect themes and genre.

UI:
Often overlooked. The bridge for players to engage with the videogame world. "Better" UI's are often seen as ones that either blend into or are designed around the main environment of the game.

Programming:
Determines technical constraints and world simulation. Physics and AI behaviours. These have a direct effect on the look and feel of the world.

Audio:
Impacts tone, atmosphere, and mood. VERY important in games. Includes things like BG music, sound FX, voice design. "The best sound design is when the audience doesn't notice it".

"How to Play Videogames" by Mark Wolf (Ch.9)

Bioshock steeps itself in its worldbuilding, committing itself to the art-deco style of the early twentieth century that blends in naturally to retro-steampunk; but is also just different enough from the true twentieth century that we know what has deviated.

Linear progression means spatial freedom is limited and players are never allowed to view the open plan; as such when rooms seem to defy physics, instead of breaking immersion, adds to the heightened sense of magic and makes Columbia seem larger than it is.

Player's character needs are woven into natural locations like food, ammunition, weapons, and money with the city's stores, banks, science labs, and government buildings.

Narrative is gleaned through backdrops like billboards, posters, and monuments. Media devices like telescope, kinetoscopes, and voxophones also serve to deepen the lore in a natural way, and are incentivised by unlocking achievements. Despite not spending time exploring deep politics, you can get a sense of it depending on the propaganda and divides in the city.

Week 3
THE POETICS OF TINY GAMEWORLDS

"Game Poems: Videogame Design as Lyric Practice" by Jordan Magnusson (Ch.1-9).

Some games are more about the emotional impact than engaging gameplay/expansive worlds/graphics. In this way, they are like poems.

Similarities between poems and short videogames:

- Short
- Often intimate and personal
- Express or explore complex emotions
- Explore meaning in the less narrative-focused aspects of our lives
- Slow the player/the reader down

Jon Stone's categorizations of videogame poetry:

Ludo-Poetic Intertextual Mutations: poem-game hybrid; games that play with existing poems and poems that play with existing games

Ludokinetic Poetry: literature that engages the reader in gameplay

"Notes on WITH THE LAST MOONBEAM" by Adam le Deox

MOONBEAM came during the early stages of the 2020 pandemic when Adam was in a creative rut, wanting to branch out from Bitsy after becoming interested in emulators and virtual machines. He lays out his timeline and a couple of breakthroughs he had during the creation.

Breakthrough One:
Discovered very quickly that large, "professional" sprites were labour intensive and time consuming. Switched to a library of tiles and placing the Bitsy sprites in the big GBA screen made it feel smaller and lonelier. Lesson: sometimes a practical decision aids the atmosphere rather than the idealistic one.

Breakthrough Two:
Had no narrative idea, only some vague themes and mood; no specifics. Then while walking the toddler daydreamed the entire universe's conception. While this only ended up being a backdrop for the real story, everything fell into place from there. Lesson: concepts can't be summoned on a schedule. It relies on elements outside of our control.

Reading Notes: Weeks 4-8

Week 4
ENVIRONMENTAL STORYTELLING

"Game Design as Narrative Architecture" by Henry Jenkins

Ludologist: those concerned with the mechanics of gameplay
Narratologists: those concerned with the story of gameplay

Not all games tell stories

They can be abstract, expressive, or simple puzzles. Sometimes to understand a game you need something beyond narrative.

Many games do have narrative aspirations

Some want to evoke emotions from previous narrative tropes and experiences, and depend on familiarity with certain tropes and roles in fiction. Therefore some understanding of how games relate to narrative is necessary.

Narrative games don't need to tell one, rigid story

Games such as The Sims and Dungeons and Dragons don't need a set script. Narrative games can be fluid.

Playing games is not experiencing story

Many other factors such as playstyle, cinematics, mechanics, controls, etc – will come into play for a game as well. It is the sum of its total experience.

"Games, Schools, and Worlds Designed for Violence" by Jacob Geller

Draws parallels between shooter gameworlds and the design of USAmerican schools, which are frequently victims of shootings. Ironically, a lot of shooter games are designed with more subtlety that there's going to be an active shootout with additional concern for the world's beauty, than USAmerican schools, whose first priority is probably cost efficiency and so put up blank concrete walls and keycard systems that remind students painfully of what could happen at any moment.

Additionally, many USAmerican Colleges have been designed to make student occupation impossible in fear of protests and buildings being taken over. Movement around campuses have become more regulated, completed with photo IDs and the removal of places for people to congregate. It even infiltrates inside: dim lighting to discourage studying, revolving doors that let people in but not out, and the fixed furniture that can't be rearranged for groups.

Week 6
THE POLITICS OF STORY STRUCTURE

"The Carrier Bag Theory of Fiction" by Ursula K. Le Guin

The human race didn't have to work nearly as hard as we have since inventing society; we could live decently off foraging, which didn't take all that long. With all this extra time, we told stories.

Virginia Woolfe had a thought of reinventing English to tell a new story, in doing so redefining "heroism" as "botulism". Hero as Bottle. Something able to hold something else. In fiction, the hero is able to hold many things. Sometimes an ideal, sometimes a concept.

The Carrier Bag Theory of Human Evolution is the theory that before weapons and tools, the first invention of mankind was probably some kind of bag. This was so, as primarily foraging creatures, we could carry our food and have some later.

This is, in a sense, similar to how human's hold stories. We hold them in our heads and in our hearts like bottles; without a human, the story dies. If a tree falls and nobdoy is around to hear it, does it make a sound? If a story is told and nobody hears it, is that the same?

"Write Worlds Your Readers Won't Forget" by Stant Litore (Ch.4)

The less privilege one has, the more adaptive they need to become to survive. The more privilege you have, the less away you are of these behaviours.

For example, women have to be more vigilant when walking alone than men. She might engage in behaviours such as clutching her keys against an attack, checking the backseat for invaders, and checking the shadows. Meanwhile, a man will simply walk to his car and get in.

Who has privilege and who doesn't will define a lot of social rules in a civilisation.

1. What injustices/perils will pass without notice from the society's most comfortable?
2. What events do these character permit through apathy or ignorance?
3. What kind of experience would make them aware of these events?
4. In the event of a crisis, who will be the most believed in, and who will be ignored?
5. What adaptive behaviours do those without privilege display to navigate their survival and increase security?

"Justice is specific. Law is general."

This quote shows how, no matter how "fair" you make the laws, somebody will always be unaccounted for.

Week 8
GAMES AND RULES

"Rules of Play" by Salen and Zimmerman (Unit 1)

Meaningful Play:

There are 2 types of meaningful play: descriptive and evaluative. Descriptive addresses the mechanism that all games make meaning through play. Evaluative helps us understand why some are more meaningful than others.

Design:

Semiotics is the study of meaning and concerns with how signs represent or denote, and people use signs to designate objects/ideas. Meaning results wehna sign is interpreted, and context shapes this.

Systems:

The way elements are identified in a game depends on the system it is framed by, of which there are three framings: cultural (open systems), formal (closed systems), and experiential (open or closed systems).

Interactivity:

Interaction provides participants with choices, which in turn provide meaning. The space of possibility is the space of all actions and meanings that can appear during the game.

"How To Play Videogames" by Rolf Nohir (Ch.2)

Due to the constraints of old technology, older (particularly Golden Age) videogames had simple and "elegant" rules, where the "less is more" principle is applied.

Rules make the game function, but the rules are violated a lot more often than we would think. Gamers frequently break rules, break code, and this is often best demonstrated in sandbox games where they are free to be as unconventional as they want.

A rule possesses three definitional standards:

1. A guideline
2. A social regularity
3. A predictable phenomenon

"Liberating play" is seen with children's games like tag where there aren't any worldly consequences, and rules are flexible. (Eg; A child being tagged claiming they have an invisible shield and can't be tagged.)

What is a Gameworld?

In videogames, the gameworld is the place you traverse – the place where you spend the most time in, the place that the player character explores, and the place where your goals and achievements lie. However, if I am to truly push the boundaries of making gameworlds, first I have to understand what one in. After all, you can't break the rules without knowing what they are first. So I broke down the world and started there.

What is a Game?

The Oxford Dictionary defines a game as "an activity that one engages in for amusement or fun", however this definition feels too broad. For example, this definition could also be used for the word "hobby", and most hobbies can't be considered games. So I looked to playtheorists and game designers to see what their definitions were.

"Games are an exercise of voluntary control systems, in which there is a contest between powers, confined by rules in order to produce a disequilibrial outcome." – Elliott Avedon and Brian Sutton-Smith

- An exercise of voluntary control → entered willfully
- A contest of powers → has goals and conflict
- Confined by rules → has rules
- A disequilibrial outcome → can be won and lost

"[A game is] an interactive structure of endogenous meaning that requires players to struggle towards a goal." – Greg Costikyan

- An interactive structure → are interactive
- Endogenous meaning → creates internal value
- Struggle towards a goal → has challenge

"A game is a closed, formal system that engages players in structured conflict, and resolves in an unequal outcome." – Tracy Fullerton, Christ Swain, and Steven Hoffman

- Engages players → engages players
- A closed, formal system → are closed, formal systems

Schell, Jesse. *The Art of Game Design : A Book of Lenses*. Boca Raton, Crc Press, 2015.

What is a World?

Again, the Oxford Dictionary defines world as "the earth, together with all of its countries and peoples", and again this is an unsatisfying, basic definition that does nothing to cover the full amount of what the word could mean.

From the Gaming Perspective:

A world can really mean almost anything. It can be used to describe a planet, place, metaphor, even a group of things. We commonly divide our own planet, Earth, into the "Western World" and "Eastern World", because they are such fundamentally different places. However, in order to find out how to make the best world for a game, I have to analyse what a player would want out of their environment.

1. Is a space for the game. They can't be within a vacuum. The world must set the scene and have room for whatever the mechanic, story, or puzzle is – and furthermore should enhance those elements. It would not make sense to set a game with a water mechanic in an active volcano.
   - Contains the space and sets the scene for the story, mechanic, and puzzle.
2. The world should engage the player. A boring world oftentimes equals a boring game. Pac-Man would be less fun if it wasn't a labyrinth. There are many ways a world can engage the player, either through its rules, attractiveness, or with its narrative.
   - Engages the player, either through its rules, aesthetic, or story potential
3. Games are chronotopes, which means they tell the story both with space and time, so linking the world to the time is important. Before automatic day/night cycles were invented, there were a lot stronger links between the space and time of the story – often whole stages to be progressed linearly futhered a day/night cycle – or different stages furthered different aspects of the story.
   - Is linked to the time as much as it is linked to the narrative

What is a Gameworld? Pt. 2

Videogames are spatial storytelling media (a chronotope!), so defining the world around them is incredibly important. This, I think, will be my biggest hurdle in gamecrafting. As a novelwriter at heart, I have a tendency to write scripts in a purely linear fashion, and so previous attempts have ended up more like visual novels than games. However, by creating a compelling world and exploring what that has to offer, that could help me make non-sequential plot points and improve the narrative of my games.

Gameworlds are very important aspects of modern videogames, as they allow us to tell much more engaging stories and create better art. In the days of arcade videogaming, these gamewplrds had to be limited – some even had none at all (such as what is commonly perceived to be the first ever videogame, Pong). But as technology has moved on, playerbases now demand intricate worlds as well as fun mechanics to move about the game.

Definitions of a World:

- Contains the space of a story
- Engages the player, either through its rules, aesthetic, or story potential
- Is linked to the time as much as it is linked to the narrative

Definitions of a Game:

- Games are entered willfully
- Games have goals
- Games have conflict
- Games have rules
- Games can be won and lost
- Games are interactive
- Games have challenge
- Games can create their own internal value
- Games engage players
- Games are closed, formal systems

The Magic Circle:

Conceived by playtheorist Johan Huizinga, author of Homo-Ludens (Man, the Player) in 1939, he originated the idea of the "magic circle".

"All play moves and has its being within a playground marked off beforehand either materially or ideally, deliberately or as a matter of course. Just as there is no formal difference between play and ritual, so the "consecrated spot" cannot be formally distinguished from the playground. The arena, the cardtable, the magic circle, the temple, the stage, the screen, the tennis court, the court of justice, etc. are all in form and function playgrounds, i.e., forbidden spots, isolated, hedged round, hallowed, within which special rules obtain. All are temporary worlds within the ordinary world, dedicated to the performance of an act apart. What happens in this "playground" bleeds into the real world." — Johan Huizinga, Homo-Ludens

From this perspective, almost anything could be a game, just the same as almost anything can be a world.

So, I've defined what a "gameworld" is, but why is it so important to games design? I narrowed it down to 3 perspectives for the answer.

From the Narrative Perspective:

- Create the driver of the story
- Creates context that makes action meaningful and compelling
- Makes the player WANT to engage with the story
- Depending on the expansiveness and detail of the world, provides escapism/"third space" for society.

From the Mechanical Perspective:

- Gameworlds define the game's rules, and most games must have a ruleset in order to function
- Defines how the player should interact with the game, and how they would go about breaking these rules
- Allows players to discover on their own

From the Business Perspective:

- A good gameworld makes profit by allowing the players to interact with some of its aspects without the game. This can be done through:
  - Transmedia franchises
  - Fanfiction, fanart, cosplay,
- The world needs to be able to support coming at it from multiple angles as people interact with worlds differently
- Sustains films, comics, novels, spinoffs, toys, theme park attraction, conventions, and more

Environmental Storytelling Pt 1: What is It?

Environmental storytelling is the practice of inferring information to players without having to expedite, usually for a weightier impact. It is utilized a lot in narratively-focused games with a large world, because it will serve to be a more immersive experience and make the game feel more real. Furthermore it comes with additional benefits, such as not having to interrupt gameplay to build lore, or serving as tutorial or guidance to lost players. Environmental storytelling adds a ludic dimension to games that gives a greater sense of subjectivity to players so that they can feel more "satisfied" by being able to piece together aspects themselves, accommodating divergent player pathways akin to a narrative desire path, and when done correctly, makes the world feel more rich and full of life.

Environmental Storytelling in Real Life

Environmental storytelling works because it draws from real-life aspects of a world. Archaeology is a type of environmental storytelling, because archaeologists piece together the lives and happenstances of people who are no longer here to tell the tale – and there is no more famous example of this science than the Pompeii excavations. As historians explore the wreckage of a once-proud city, they find not only the skeletons of people that once lived, but their actions as the ash preserved them perfectly in their final moments, showing us what they chose to do in the face of the eruption. Some of the most famous parts of Pompeii are the graffiti left on the walls of buildings; this is a form of environmental storytelling. These people aren't around anymore, but we can infer they lived and how they lived through what they left behind.

Another version of real-world environmental storytelling are the excavated stone tablets addressed to Ea-Nasir, dated as far back as 1700BC from Mesopotamia. One, most famous tablet, is written in a long-dead language called Akkadian Cuneiform, and writes a message of complaint to Ea-Nasir from Nanni, who paid for copper ingots and found them sub-standard, and Ea-Nasir's servant rude – however there were many "complaint letters" buried in what was believed to be Ea-Nasir's home. From this historians have inferred that Ea-Nasir was a copper merchant, and that he scammed people with low-quality copper. It is a fascinating form of environmental storytelling; without these tablets, we would never even have known of Ea-Nasir's existence, let alone his bad copper.



Even this picture is a form of environmental storytelling: the short tale of a small animal, likely a pet, who decided to go out, discovered it was much too cold, and promptly went back inside. All this is gathered just from looking at a photograph of some pawprints!

Environmental Storytelling in Videogames

Perhaps the most famous example of environmental storytelling in videogames is Bioshock, a game that had a tremendous amount of thought and care put into its presentation. The artists' dedication to the art deco movement of the 1920s to 1930s and their depiction of Columbia serves to immediately immerse the player in atmosphere, using buildings and technology and adverts as visual guides to the type of setting. As well as this, spatial freedom is limited, with players having to progress linearly and often unable to backtrack through rooms, and this combined with a somewhat confusing geography leads to the gamespace feeling incoherent – and far from breaking immersion, rather it heightens the sense of the city's vastness and ambiguity, and the choice to "withhold" information by making certain aspects seem unexplorable makes the world seem yet bigger.

Matthew Thomas Payne, and Nina Huntemann. *How to Play Video Games*. New York, New York University Press, 2019.

Environmental Storytelling Pt 2: Types of Environmental Storytelling

So, I have discerned what environmental storytelling is both in reality and in its application to videogames, but how do I achieve it myself? Videogames utilize a lot of different techniques for different types of narration, which I will categorize below.

1. **Excavated Story**
    a. This refers to a narrative put together through looking at clues and props left in the scene. Another term for this which is used in film studies is mise-en-scene, however my preferred way of thinking about it is Chekhov's Gun – a narrative idea coined by Anton Chekhov (a Russian playwright) that refers to the idea to remove anything that is not relevant to the story. He wrote : *"If you say in the first chapter that there is a rifle hanging on the wall, in the second or third chapter it absolutely must go off"*, and I believe this can also be applied backwards in narrative storytelling – that all props and clues must be thematically or atmospherically relevant to making the story feel alive and immersive; that the "gun" – instead of foreshadowing something that will happen in the future – reveals something about the past.
        i. What Remains of Edith Finch is a story all about the player excavating these clues from the past to build up the main narrative as the player character moves throughout the house. It uses excavated storytelling as the player interacts with props to find out about the history of their family.
2. **Evoked Story**
    a. This refers to a narrative that is already in the player's consciousness, that can be "evoked" through various motifs. Often this narrative will take the shape of a cultural fable or religious story. One common usage of this are stories about betrayal being evoked with Christian symbols such as apples and snakes, to represent the story of Adam and Eve, or alternatively the betrayal of Judas. .
        i. A very direct evocation of story is found in Layers of Fear, a horror game, where there is a cutscene detailing his failure to be a father shown with red paint/blood writing on the wall that recites the poem *"Oranges and Lemons"* by Tim Hart and Friends. The poem is a well-known children's nursery rhyme that recounts church bells "talking" to one another about a great debt, with the ending two lines being: *"Here comes a candle to light you to bed. Here comes a chopper to chop off your head!"* The song is being used as a threat, and evoke the artist's great debt he owes the family by never being there.
3. **Emergent Story**
    a. This refers to a story that happens because of player intervention; that without the player, there would be no story at all, because of how intrinsically they are linked. Essentially with emergent stories, players are given the building blocks and props to make their own story, instead of there being a pre-written script to play through.
        i. Dungeons and Dragons is a tabletop roleplaying game that is almost entirely player-created, while the Dungeon Master acts as little more than an establisher of atmosphere and guidance. The decisions the players make, whether to kill or befriend an NPC for example, and the roll of the dice, lend itself to even more creativity without the constraints of a visual medium like videogames. Quite literally – anything could happen!
4. **Enacted Story**
    a. This refers to a story that will only have one outcome regardless of player interaction. This type of story is often criticised in videogames of being a mere retelling and limiting choice, have consist of little replay value. However just because a story has little replay value, doesn't mean the story itself isn't fulfilling, and doesn't deserve to be told.
        i. Iron Lung is a videogame set in a submarine that enacts the tale of a prisoner sent to a planet filled with blood to photograph certain areas to mark resources. While you are in the sea of blood, you can see nothing but the interior of your submarine, apart from when you photograph the outside. Slowly the player realises they are not alone in this ocean, until the very end, when the monster following you leaps out to kill you, ending the game.

Environmental Storytelling Pt 3: Techniques and Narrative Impact

Tools of Environmental Storytelling:

- Architecture, monuments, ruins, technology
- Mise-en-scene (eg; steampunk machinery, a table laid with fancy china)
- Art, decor, costumes
- Natural factors (eg; dust, mould, flora and fauna,
- Adverts (eg; posters, radio, newspapers, and billboards)
- Corpses
- Graffiti, handwritten notes (eg; shopping lists, post it notes)
- Messages between characters (eg; voicemail, hologram, letters)
- Photographs

Setting vs. Architecture

At this point it is important to distinguish the difference between setting and architecture, because while they sound similar, the two of them carry out separate functions. Setting tells the player about the broad but significant atmosphere, such as the time period/geography of the gameworld. Architecture on the other hand, tells the player about the events/experiences, or the patterns of behaviour that is typical in the setting.

Inscribed vs. Elicited Narratives

Inscribed narratives are the game developers posing the question to the player of "what happened here?" This is linked to excavated storytelling, in which the player uncovers events by looking at props. Elicited narratives on the other hand, are the game developers posing the question of "what should happen here?" This is the opposite; the player using props to find out what they should do next.

Form vs. Path

Form is the design of space, which will affect the player's mental monologue, the atmosphere, and the ideas of emotion present. Path meanwhile determines how the player moves through this space, and will convey the sense of progression – for example; sequence; repetition; rising and falling action.

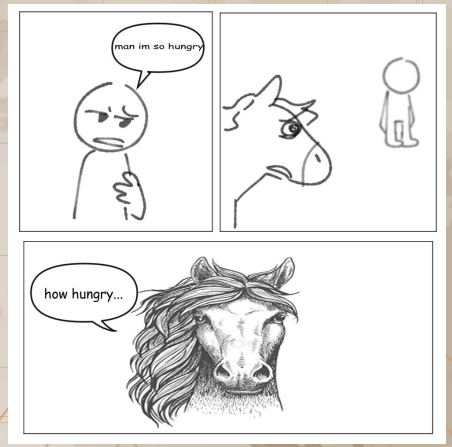
Modular Storytelling

Modular storytelling is the practice of telling a narrative in such a way that the rearrangement of sections tells a different, but nonetheless coherent, story. It is a good practice for videogames because of their nonlinear nature, and as such are a good skill to learn. You can prevent the player from exploring, but depending on the game, that could lead to a lack of player satisfaction. Players should be able to explore, and take the story as it comes!

To help us get into the frame of mind for modular storytelling, the class was given cards and told to try and tell a narrative (preferably based on a well known text), that each held a sentence of a story, and then to rearrange the cards and retell it. If any parts make the story incoherent, we should rewrite the sentence. Here is what my group came up with, based on a semi popular meme about a horse:

The man was standing – the horse grew nervous – the man said "man, I'm so hungry" – the horse was standing – the horse asked "how hungry?"

The man said "man, I'm so hungry"-- the horse was standing – the horse asked "how hungry?" – the man was standing – the horse grew nervous



"How Hungry Meme Generator - Imgflip." *Imgflip.com*, imgflip.com/memegenerator/444898218/How-hungry. Accessed 1 Nov. 2023.

Famous Abandoned Places

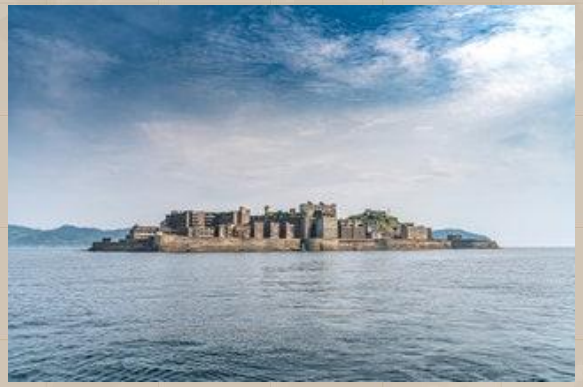
Kolmanskop, Namibia. A diamond mining town that was abandoned when more diamonds were found south.



Michigan Theatre, Detroit. Closed in 1967 after the rise of household television sets.



Hashima Island, Japan. Once the most densely populated island in the world, residents left after the coal deposits resting underneath ran out.



Power Plant IM, Belgium. Built in 1921 and closed in 2007 after a greenpeace protest.



Why Are Places Abandoned?

The world I create must be uninhabited, so to generate some ideas I will first explore what causes places to be abandoned, and the effects that it has on the environment around it.

<u>Why are places abandoned?</u>

- Financial issues
- Natural disasters
- Deterioration
- Developmental issues
- Difficulty in finding people to live there
- Access problems (land disputes, road closures, etc)
- Costs too much to tear down a building; owner would rather leave it be
- Dangerous wildlife
- Historical preservation

Thanks to the 2020 pandemic, we actually have a better grasp of what happens when humanity abandons the world, as for one year everyone kept to their houses. In that short span of time, wildlife began to roam the streets; canals in italy in particular had water so clear dolphins returned to them; there was a harsh decrease in air pollution – and these are just some of the effects. Long-term, and plants/weeds would have started to reclaim some of the buildings.

Mindmap

Red String Choice-Based Crime-Solving Game

- Point and Click
  - Follow the red string across a corkboard to gather evidence and put together the clues
- World devoid of human life as the crime scene has been cleared out
  - Just have to ensure no pictures are included in evidence, as that would break the “no humans” rule
  - In this case, the “world” is being defined as the victim’s house
- FATE (Red String of Fate)
- Put together the clues and accuse someone at the end of five minutes

Abandoned Earth being explored by student robots on their archaeological dig

- Starts historical and gets progressively more modern
  - Churches
  - Cinemas
  - Farms
  - Monuments
  - Transport
  - Medieval => Industrial Revolution => Victorian => 1900s => 2000’s => Cyberage => Starship Fleets => ....
- Comedy turned melancholy
  - One day, the humans left to navigate the stars. Where are they now?
- 2D side-scrolling/point and click
- Robots designed can’t resemble humans
  - Deltarune Sweet Cap’n’ Cakes
- Assuming wrong things about humans for comedy effect
  - Show this through the robots writing down absurd things in a notebook that occasionally pops up on screen

Fae Gets Trapped in a Machine

- To avoid humanization, depict fae as a speck of light/butterfly-esque
  - ... Or maybe a butterfly would just make more sense than a fae
- As you navigate the machine you see different parts of it and it has been abandoned
  - Rusty, steampunk aesthetic
  - Why has it been abandoned, though?
  - As you go through different parts of the machine clues are left as to what it does, but not all is revealed until you escape and find out the machine is a giant... what?
    - Howl’s Moving Castle?
- Health bar goes down if you touch metal
  - Simple, control-based puzzles
    - Dodge through spinning gears
      - Pipe maze
      - Avoid hot steam and oil drips!
  - Comes from the old-fashioned notion that fae cannot touch metal
    - Passing out means you return to an oily rag left on the floor

Practice Game: Find Frank

Before I got started on Bitsy and Twine, I developed a practice game as a class project in an engine called Flickgame. It is a very simple engine, in which the colour you select takes you to a different screen. I made mine entirely on laptop, which is why the artwork is limited. The biggest challenge was communicating the goal to the player, and what they must do. Without text or dialogue boxes, I had to write the instructions on screen, which broke immersion a little. In addition, we only had 2 hours to create it, the time crunch serving to help us simplify our goals. Despite this I still just ran out of time, and didn't get to create as many windows as I wanted in the city, and there ended up being a bug in which the brown room was inescapable because I forgot to code it so that clicking the blue orb sent you back.

This is the starting screen. Despite its clearly unfinished look, I am still pleased with the fact that I managed to create a coherent-looking city with nothing but a laptop, and even managed to make shadows and sparkle to the river. The drawback of having such a pretty start screen was that I had used a lot of colours already. Now I couldn't use any of the blues or purples for windows - though I still had a lot of colours left, and could reuse some if I wanted to.





Another hurdle I faced was creating unique rooms for every window. There were only so many household places I could think of. Additionally I wanted every room to be colour coded, but some of the colours look quite similar as I had to reuse secondary colours. Nonetheless I still think each room has its own unique character.

Overall I'm fairly proud of what I managed to make in such a short amount of time, and the exercise definitely taught me to think "small scope" when making in such tiny engines such as Flickgame.

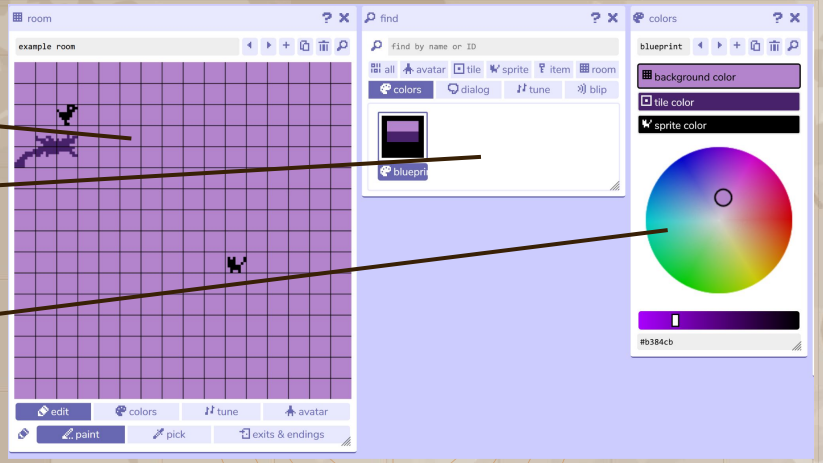
Game Engine 1: Bitsy

I did not get along with Bitsy the first time I opened it up, and still largely don't now. At the same time, it is both too complicated and too limiting – only 2 colours can be used; the sprite creator is too small; and the UI is difficult to navigate. When I was first tasked to make a small, simple game to get to grips with the engine, I could not even do that. Aesthetic is a very important part of the building of a game to me, and if I cannot make something the way I envision it in my head (or at least pretty in its own way), then I become dissatisfied and quickly give up. Everything I tried to make in Bitsy ended up ugly or incomplete, and the limit to 2 colours really threw me off. I hated it.

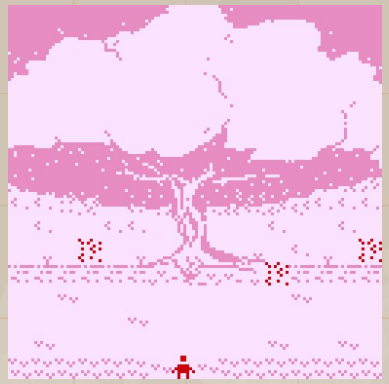
The room panel shows the different rooms for you to decorate with tiles. Like everything in Bitsy, the number of tiles is limited, and the room dimensions cannot be changed.

This panel is used for room decoration. Within a certain dimension size, you can find your assets to place into the room panel.

The colour panel is used for selecting your colours; a background and a highlight colour. Per room, you are only allowed 2.



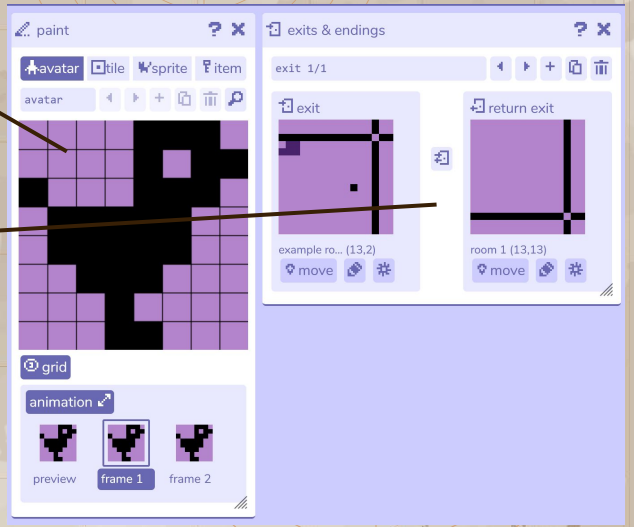
It was until I played a few Bitsy games did I begin to understand how it could be properly utilized to not only make a playable game, but a pretty one. In particular, this pixel art of a tree helped me understand how I could use the limited colour palette to my advantage. Often I forget about how colour theory can be used to a great advantage: the picture is all at once soft, friendly, and giving the impression of sunrise while only using one colour of the sunrise!



Three Haiku created in Bitsy by GiuliaC

This is the panel used for customization. Avatars, tiles, sprites, and items must be designed to fit in this 8 by 8 grid.

The exits and endings panel determine what tiles take you to/from the next room. As Bitsy's game mechanics entirely function on just moving from room to room – with little else able to be coded in – it's a very important panel.



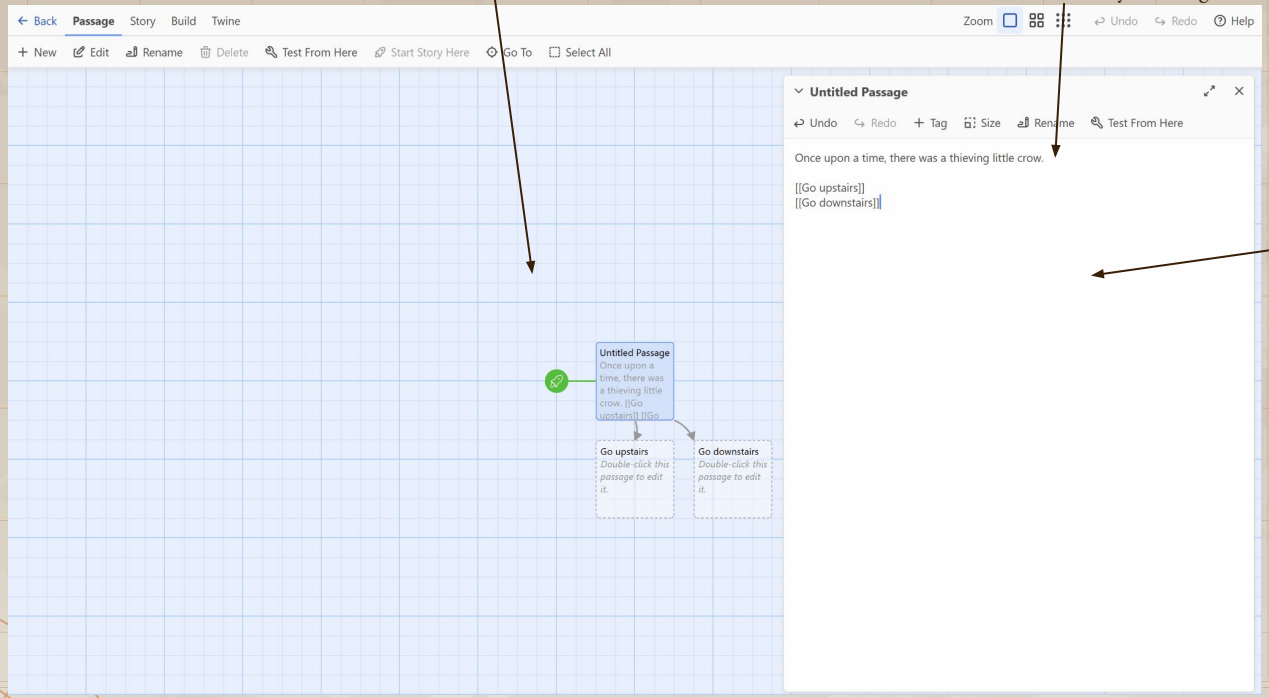
Other games that helped me were Under a Star called Sun, which I'm going to elaborate on later, and _____, a game about a sinking submarine. All of them helped me to realise not only my narrative, but what aesthetic to aim for.

Game Engine 2: Twine

Twine is an open source, free, and very simple game engine, with a neat, clean layout, and not too many mechanics to confuse yourself with. It allows you to create a block of clickable text, in which the players can select which option to choose to get to the next part of the story. I very much prefer it to Bitsy, as it felt easier to tell a narrative this way. Twine can also be used to organise a multiple-choice game, without its game engine needing to be Twine.

Space:
The space shows the physical layout of your branching narrative. It is a large space designed to help you organise, like a mind map.

Title:
The title of the passages helps you organise them. When you make a new choice option, whatever you put between the square brackets will be the new title of your daughter thread.



Passage
The "passages" are where you put the text for the player to read through. There are a lot of customisation options such as size, colour, and font. Whatever options you would like to be part of a choice, you put in double square brackets. This will make two "daughter" branches from the "parent" branch.

Brief Evolution of Video Game Graphics (1983-1999)

1983 Star Wars Arcade Game



Pac Man on the Atari 2600



Super Mario Bros. 3 on the NES



Final Fantasy II on the SNES



Super Mario 64 on the Nintendo 64



Crazy Taxi on the SEGA Dreamcast



"The Evolution of Video Game Graphics." *The Logo Creative | International Logo Design & Branding Studio*, 21 Apr. 2020, www.thelogocreative.co.uk/the-evolution-of-video-game-graphics/.

Pixel Art

Another part of my assignment was to create a small range of pixel artworks. Pixel art is imperative in understanding form and shape since you have a limited space to do so, and have been historically used in video games since video games were first created!

Pixel art is a low-resolution art style that was used in the Golden Age of videogames (1970-1983) when hardware was unable to run anything higher than an 8 and 16 bit with limited colours. Because of this, game artists had to be creative with how they present the game, leading to a unique style that makes many older people who grew up during the golden age nostalgic. In 1983 the Nintendo Entertainment System was released which boasted 256x240 pixel dimensions, and the Super Nintendo Entertainment System released in 1990 upgraded the colour range to 32,768 colours. As technology continued to improve, realism became the new goal, however while better graphics are more popular, pixel art has not been entirely displaced either – though these days it is more so used as an aesthetic choice than necessity.

The Realism Debate

There is no doubt that the technology towards making games hyperrealistic is very impressive – it's taken us years of patience, time, technology, and the odd uncanny valley mis-step – and since coming from pixel art, I can understand the appeal of realism for older audiences. Red Dead Redemption 2 is an obvious example with not only its style, but its mechanics being highly realistic as well. However, now we can just about perfectly make a fully functioning realistic game, where do we go from here? Realism has been the goal of most AAA companies for years, and now that goal has been achieved. Now there is an upheaval – particularly in younger audiences, for whom realism has always been around – for something new. Realism is impressive, yes, but is it inspiring? Does it make you want to look at it? Does it REALLY enhance the game?

My personal view on the realism vs. style debate has changed with time. I used to believe that realism was the laziest thing a game company could do – distinctly because of its LACK of style and creativity – and was simply a way of showing off. Imitation of the real world is never going to be perfect, and why settle for an imitation when you could create something unique and inspiring? I have since re-evaluated my stance since playing Layers of Fear, a horror game by Aspyr. Layers of Fear is an incredibly realistic, psychological game following the descent into madness by an artist, complete with realistic paintings and props – and in this case, the realism definitely heightens the sense of fear in the player. It also makes sense from the artistic standpoint; as a 19th century painter, realism was the height of style as portraits were commissioned, and his house is full of his own paintings to set a creepy, off-putting tone. Additionally pixel art and other styles utilize the third-person perspective, while most realistic games put you in first, heightening a sense of immersion. These days, while realism is definitely still far from my favourite art style, and in a majority of cases could be scrapped for something more unique – for example, most shooter games – I also believe that depending on the game it will be a benefit.

https://www.researchgate.net/publication/362831872_Research_on_the_Application_of_Pixel_Art_in_Game_Character_Design

Pixel Art Software

Pixel art has specific software we can use these days to make it easier to create, however with a such a range to choose from, I need to weigh up the pros and cons of a chosen few to find the software that will be the right fit for me.

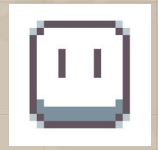


Piskel

Piskel is a free, online software for creating sprites and animations for pixel art. It is generally used for beginner artists because it of its ease of use and simple interface.

Pros:
- Works in any browser
- Supports animation
- Easy for beginners
- Simple interface
- Open source

Cons:
- Lacks proper resizing tool
- No undo button
- Limited rotation
- Doesn't work well with drawpads



Aseprite

Aseprite is the most well known, most popular software for pixel art.

Pros:
- Supports animation and has a selection of tools for it
- Easy to use
- Scriptable
- Cross-platform

Cons:
- Rigid text tool
- Pixel-styled interface can be jarring
- Costs money to use
- No longer allows redistribution of the source code



Krita

Krita is a regular drawing program, however dimensions sizes can be set to make pixel art. It is a software I have used for pixel art before, and so it's a software I'm most comfortable using.

Pros:
- Have used it before
- Free program
- Can load and create custom brushes for pixel art

Cons:
- Not originally built for pixel art
- Not as powerful or feature rich as some other programs



Adobe Photoshop

Adobe Photoshop is the industry standard for most digital art-related companies. It is another software I have frequently used, though not for pixel art.

Pros:
- Have used it before
- University lends me a free version
- Industry-standard

Cons:
- Not originally built for pixel art
- Have never attempted pixel art in this software before

In the end I decided to choose Krita, because it was the software I was already most accustomed to making pixel art on, so I already knew how to use it.

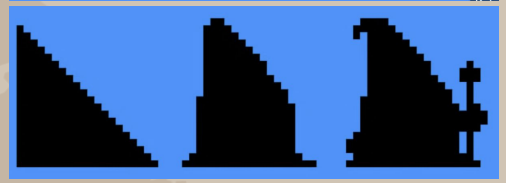
How to make effective pixel art

Pixel art is a deceptively difficult art style to pull off. As a simple style, you'd think it would be simpler to make, but often form and shape get lost in the tiny space; outlines are too thick; details are hard to discern; and it is fiddly to create depth. If I want my pixel art to be clear to viewers, I first have to understand what makes good pixel art work.

Processes



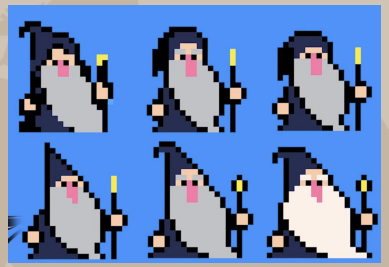
Shadow, Line, Colour, Refine
This utilizes a lot of methods at once, leading to a cohesive pixel art character by the end.



Silhouetting
This method helps find the form easier, allowing you to focus on the core shape of the character. Knowledge of shape theory is useful for this method.



Construction:
This method makes the skeleton first, and defines the features out from there. This is helpful for getting the proportions of a character before adding any detail.



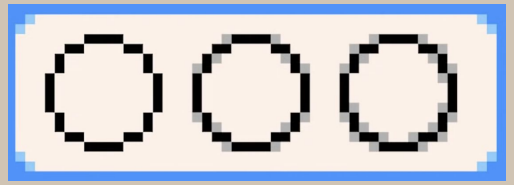
Rough
Draft as you go, making tweaks to the form as you draw. The drawback is that this can lead to a messier, less defined picture. It is helpful for getting down the raw idea – and is a method that works particularly well for backgrounds too.



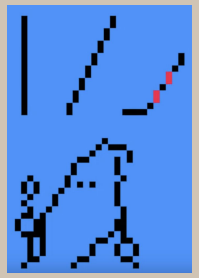
Outlines
The type of outline you use will subtly change elements of your artwork, so it's important to choose the right one. Harsher black lines will give a more cartoonish look, while blending the outline to the character gives impression of a light source. You can even have no outline!



Canvas Size
Changing the size of your canvas will drastically affect the amount of detail put into the picture. Larger sprites will look plainer, while smaller ones may be difficult to discern.



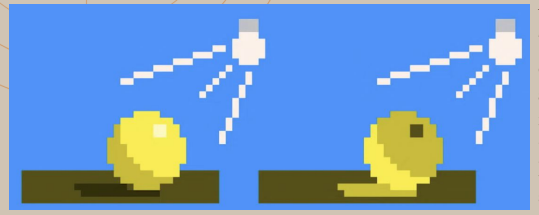
Anti-Aliasing
This method softens the shape. Too much however will alter the shape of the object.



Jagged Edges
This method adds visual interest and can be used to highlight a part of the shape – in this example, the jagged edges give the wizard a brow.

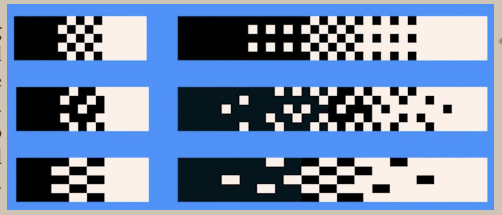
"The Ultimate Pixel Art Tutorial." *Www.youtube.com*, www.youtube.com/watch?v=IfR7Qj04-UA.

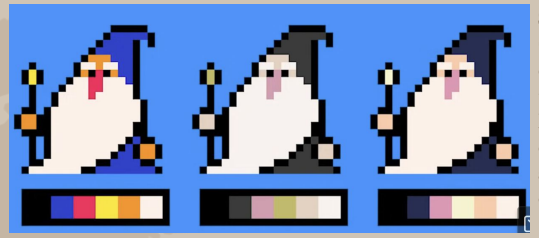
How to make effective pixel art, Pt. 2: Colour



Value
The colour value of an object determines the shadow. In the second image, the value is darker than the main object, leading to visual confusion as it creates a shadow.

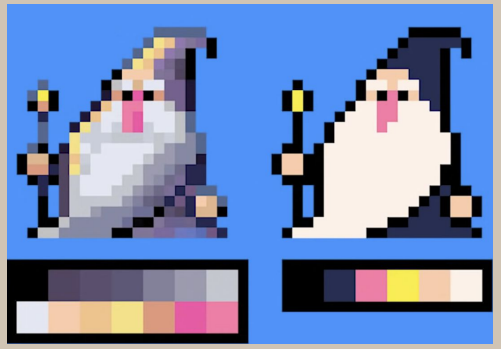
Dithering
Dithering is how pixel artists create the illusion of shading. However it can also look noisy, or add unintentional texture.





Saturation
Colour saturation is the brightness of a colour. If the colours are too saturated, they will clash and become difficult to look at; not enough saturation and the colours become washed out. Colour saturation is best used to highlight points of interest in the picture.

Colour Range
Colour range affects the cohesion of a picture. Using a lot of colours loses control of the colour palette, texture, and value structure. This also creates a slightly washed out look, so the character may fade into the background. A limited colour palette will make the picture look less messy, creates less clutter, and adds better points of rest. Though I personally prefer a higher colour range, I do see how it can be disadvantage in the long run, and will try to strike a balance.





Contrast
Contrast also emphasises parts of the work. In this picture of a wizard, the pattern in his beard draws attention to his nose. There are many different patterns you can use to make different contrasts, all with different effects. However for these high contrast areas to stand out, you also need points of rest so the eye can relax.



Clusters/Orphan Pixels
Pixels can be used to form chunks and describe areas. The bigger the chunks, the more cohesive the area you're describing, however single pixels (or "orphan pixels" can also be used to create detail, adding to a grittier effect. Personally I prefer the grittier version, because it looks less cartoonish, however I must also be careful not to create too much noise again, and not to lose the overall structure.

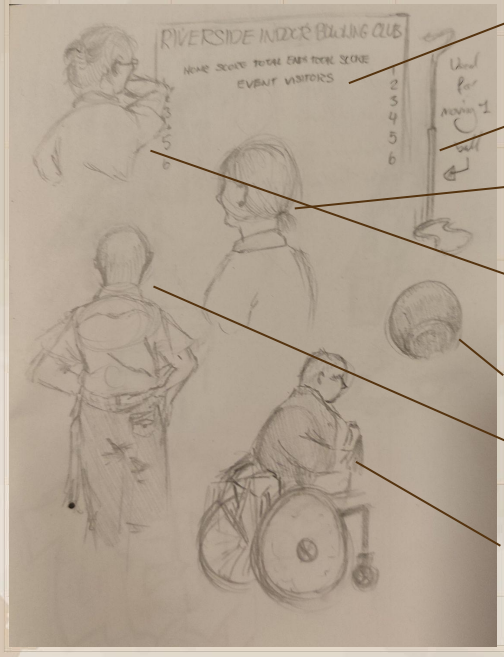


"The Ultimate Pixel Art Tutorial." *Www.youtube.com*, www.youtube.com/watch?v=IfR7Qj04-UA.

Life Drawing

For one of our class field trips, we were tasked to go to a skatepark/bowling field and draw what we found there. This exercise helped me define basic shapes and sketch quickly, in turn improving my form – which will be crucial when creating my pixel art.

The first half I spent in the Riverside Indoor Bowling Club, where I rediscovered how difficult life drawing is. Since bowling is a physical sport, the participants kept moving around, making them hard to capture in a picture. I am also not very well practiced in realism, making the entire exercise a lot harder. It definitely taught me to capture form and shape early, before the people moved around or switched sides again.



Sketch of the scoreboard hanging on the far wall. Since I had no ruler, it was difficult to keep all the angles straight, and I don't think I did it justice.

Sketch of the object they used to move single balls around. Its shape was very strange.

Sketch of a woman at the club. She remained mostly stationary, but due to the angle of the railing I couldn't see the rest of her body.

Sketch of another woman at the club. Her hair was hard to draw, as it was up in a bun, and she moved her arm back down before I had time to draw the full thing.

Sketch of the ball they were using to bowl. Unfortunately the sketch of the insignia had blurred out a little.

Sketch of a man at the club. He remained in this pose for some time, allowing me to capture the folds in his shirt.

Sketch of a man at the club. Since the objects and people I was drawing had been relatively simple so far, I wanted more of a challenge. Due to the angles however, I couldn't see all of his wheelchair, and it ended up looking very wonky.

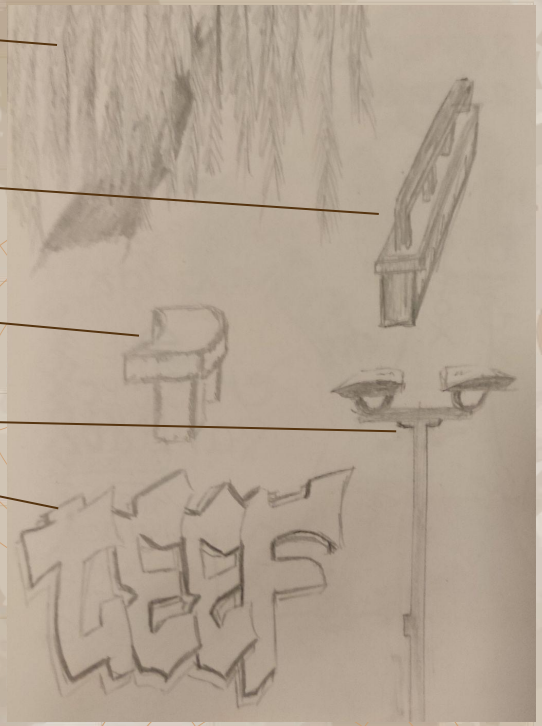
Sketch of a willow tree overhanging the skate park. The leaves were the most time consuming to draw, and they still ended up looking a bit sparse.

Sketch of skate equipment. Getting the angle and perspective was fun, and I think I managed it well.

Sketch of a concrete bench. Again, drawing the perspective was a fun exercise.

Sketch of a lamppost. This was more difficult to draw since it was further away, and kept being obscured by tree leaves.

Sketch of graffiti left on the side of an abandoned building opposite the skate park. This was the most fun to draw as the shapes and angles were fun and strange, and additionally the bold bits made the graffiti stand out more.

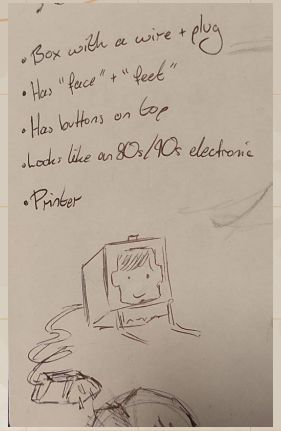


For the second half I was in a skate park, and decided to practice drawing stationary objects rather than people, since the park was empty. This was easier, since the objects didn't move around, so I could take my time sketching in the detail as I went.

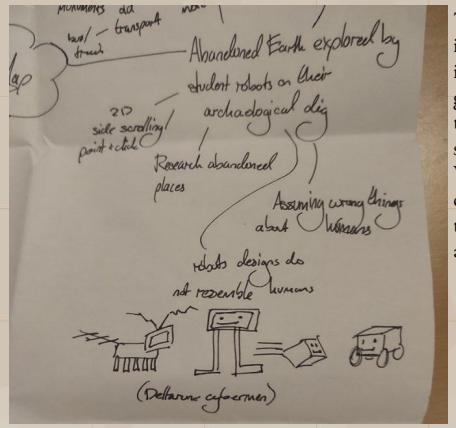
Where did They Go?

With preliminary research done, I decided to choose the game about the robots making archaeological dig about humans, because it seemed the most suited to that premise. Inspired by A Short Trip – a class videogame assignment from week 1 – I decided it should be a side-moving game with an emphasis on progression through movement, where the puzzle was not so much mechanical but realised through visual cues.

This is when I decided to start drawing up concept art.



This sketch came from a workshop where the class was divided into pairs and each given an object to observe. There were an abundance of exercises for colour, shape, and drawing from memory – this is, from memory, a miniature printer from the 2000's.



These were my very first design iterations; mostly goofy and ill-thought out. My only real goal at this point was to make them simple (easy to make a sprite), and non-humanoid. Vaguely, I was inspired by the cybermen from Deltarune – they have some similar shapes and form here.

There was just one, tiny problem. I hated the robots.



"Spoink" was made from the parts of the aforementioned miniature printer, broken down, and rearranged. It's probably my favourite design so far, and reminds me of the creatures from Super Paper Mario for the Wii; a game I loved as a child.







Where Did They Go? Pt. 2

Most ideas involving robots bore me to death, with very few exceptions – such as What Will Football Look Like in the Future (a fascinating 25-chapter speculative fiction), and certain characters from Deltarune (Chapter 2). However, these two concepts will be very difficult to put into my game. What Will Football Look Like in the Future – also known as 17776 – is more suited to a text-based Twine game, and the characters in Deltarune both look and function as humans as well as robots, which disqualifies both of them from being used as inspiration here. Love, Death, and Robots' episode 2, Three Robots, has a very similar concept to what I was thinking – so similar, in fact, I think I was subconsciously drawing on it – however since it's so similar, any further inspiration taken would probably just end up as a rehash, and I'm striving for originality. So if not robots, then what?

Then it struck me what I could use instead: animals!

Of course; when humans are gone the rest of nature will take the earth. There are many animals now that are developing and evolving right under our noses. Now the only question is what animal should I pick?

Intelligence in Animals

OCTOPUS

Octopi are seen as incredibly intelligent by humans, chiefly because they have a way of screwing around with scientists under study – specifically reef octopi, who have adapted for solving complex visual puzzles and are more sociable thanks to their exposure to reef environment (as opposed to deep-water ocopi, who have adapted to a slower paced lifestyle with less social interaction). They hunt in collaboration with reef fish, and are able to receive and respond to gestures made by their hunting partners, demonstrating complex cognitive abilities. As to pranking humans, a captive at the University of Otago in New Zealand had to release their octopus because it was squirting jets of water at the lightbulbs, and short-circuiting the power supply.

The problem with picking an octopus is that it is an aquatic animal, and therefore unlikely to come across human structures unless they explore a submarine or sunken ship. This limits the concept to what can be found underwater. While octopuses can go on land, they can only last about 30-60 minutes at a time. Then there is also the problem of the sprite – with 8 limbs, octopus are difficult to make into a Bitsy avatar.

DOLPHINS

Dolphins are highly regarded as one of the most intelligent species, as they are highly capable of learning and mimicry. Their evolution has progressed as far to making traps and tools for hunting prey with mud and sponges. Pods of dolphins alter behaviours of hunting to human activity – knowing when to avoid specific areas during construction, or timing their hunts around humans.

The drawback of having dolphins as a focus is that dolphins are also commonly regarded as "evil" when judged by a human morality. Many dolphins participate in bullying and rape of other animals; they slowly chew on pufferfish to achieve highs, and during one instance in 2009, the United Press International reported that dolphins at the Dolphin Research Centre in Grassy Key, Florida, had started to toss baby sharks back and forth between them like a volleyball. Many instances like this have earned them some very dark spots on their reputation. Additionally, I run into the same problem as I did with the Octopus: dolphins are aquatic animals, and humanity is not.

ELEPHANTS

Elephants are said to rank equal with dolphins in terms of intelligence, without the "evil" association, and form close-knit societies with one another that are only broken by death; they showcase an extreme emotional intelligence and a capacity for mourning that make them highly favoured animals. When two elephants were shot by poachers during ethologist Cynthia Moss' time studying African Elephants, she recalls that the elephant family tried hard to get the less-injured elephant to stand. Upon failure, and when both elephants died, they buried them in a shallow grave, threw leaves over its body, and stayed with them for the night.

While elephants are land animals, they are not one found usually outside of Africa and India. Their size also leads to a difficulty with them interacting with the remains of humanity: elephants would be too big to fit into most structures, and might even accidentally crush some. A lot of cities would have to be rebuilt entirely to accommodate them, erasing history rather than preserving it. And again – elephants would be difficult to sprite into a tiny Bitsy avatar.

ORANGUTANS

Orangutans are also highly intelligent, social creatures. They can use tools, have the problem-solving abilities of toddlers, and have complex social behaviours. One famous orangutan, Chentek, born at the Yerkes National Primate Research Centre in Atlanta, Georgia, was taught ASL (American Sign Language), and Chentek used this to ask for different types of food. He spent nine years at UTC under supervision to be given an education, however grew enormous and managed to break out and attempted to fight a female student there; he was relocated to Yerkes in a depressingly small cage, whereupon seeing his old caretakers again, he signed for them to get the car keys, and take him home – demonstrating a very long-term memory for faces, and ASL. They are very similar to humans.

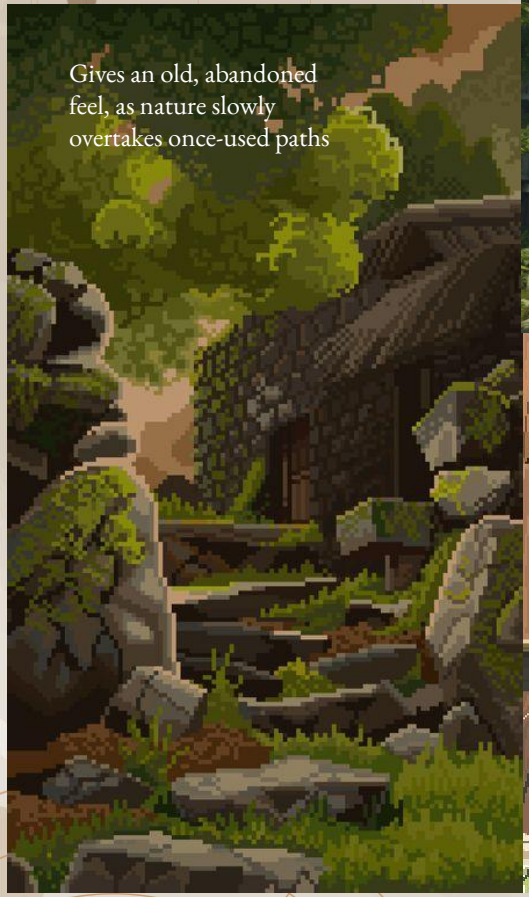
Perhaps a little too similar. After all, humans themselves also descended from apes. Orangutans don't add much meaningful new context in handling what would remain of us. They would interact with it largely in the same way. As such the idea becomes flatter, and more boring, than if a uniquely different animal took up the world.

CROWS

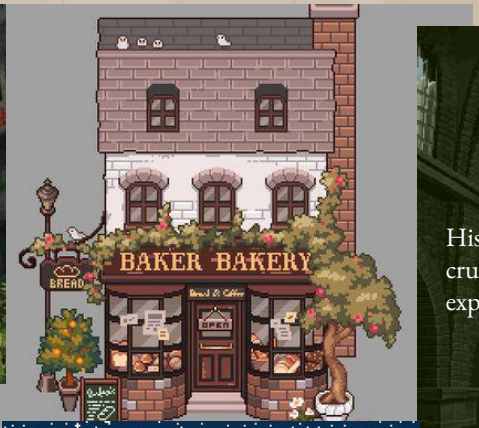
Crows, by human standards, are some of the most intelligent animals in the world. Scientists have discovered them creating tools to pass down through families, making art, and having very sophisticated forms of communication. This, in essence, is a kind of stone age. So if every human left earth one day, crows would make a strong contender for what animal would come after us in the evolutionary race. Not only this, but birds are easy to make as sprites – perfectly suited for Bitsy!! There are a few other animals that could be contenders for what would rise after humanity – dogs, octopus – however, crows seemed the easiest to sprite, and the animal I was the most personally invested in.

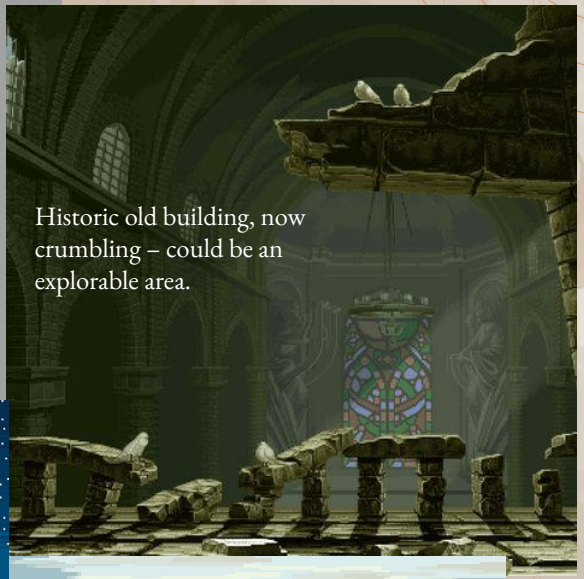
Additionally, using a crow as an archaeologist brings a level of comedy, as crows are often known to hunt and steal shiny things. My main crow protagonist could have a vested interest in finding old artefacts such as coins and jewelry, and ignore the "elephant in the room" of the dead, skeletal body. As a further note, crows are scavengers, and are commonly symbolic of death. They would not be cowed by inheriting a "dead world".

Moodboard

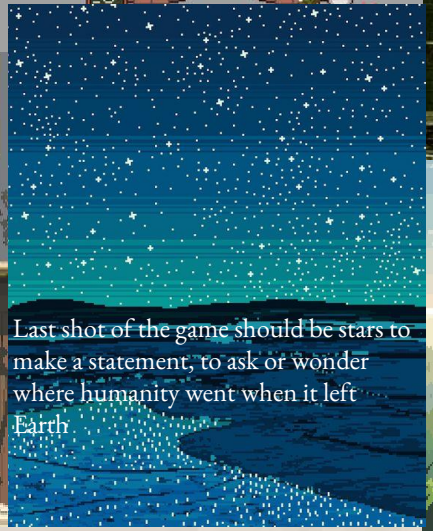

Gives an old, abandoned feel, as nature slowly overtakes once-used paths


City grown over with plants - I can imagine crows making nests up in the higher apartments


BAKER BAKERY
BREAD
OPEN


Historic old building, now crumbling – could be an explorable area.


Replace cat with a crow, peeking out from its borrowed house

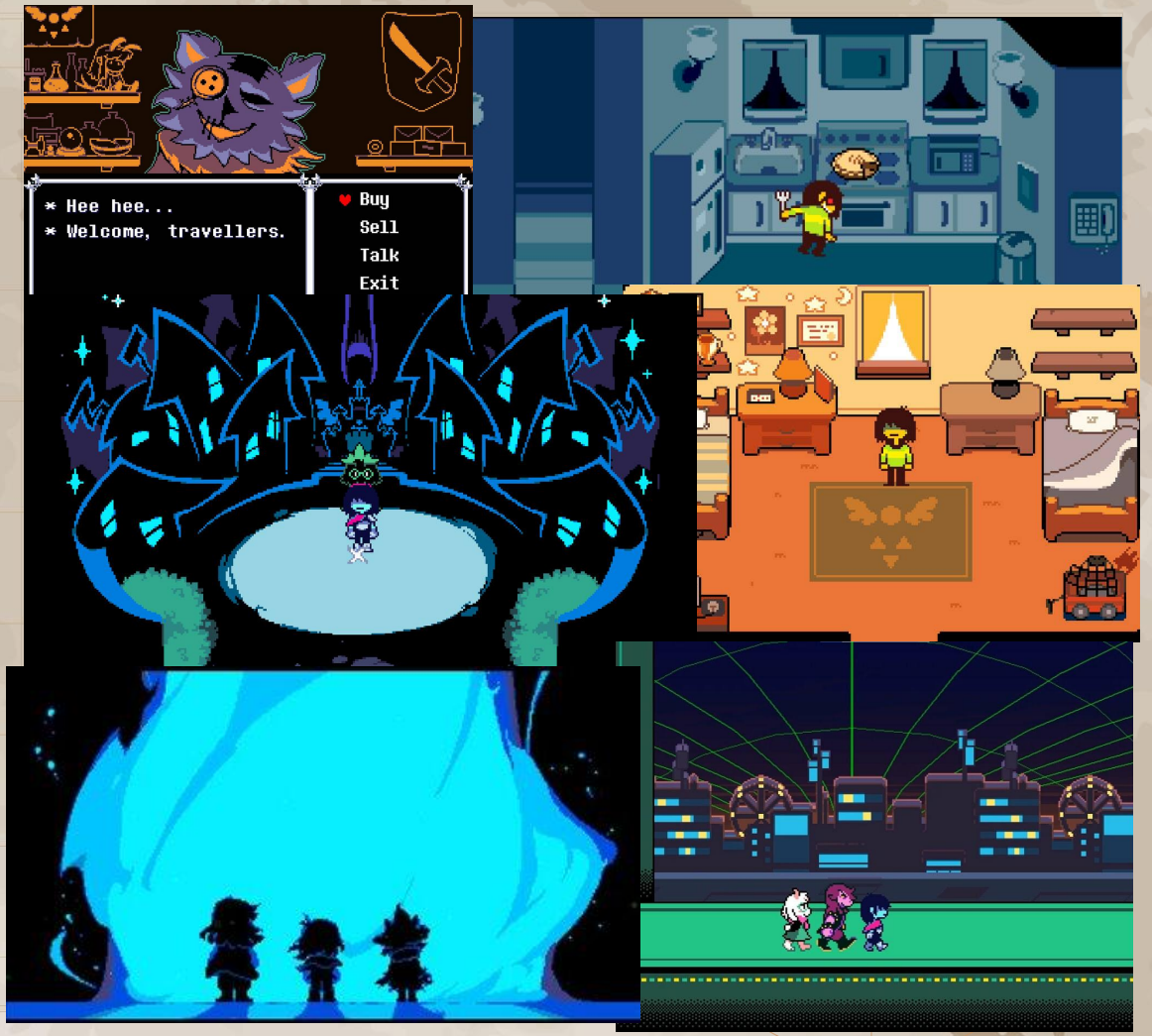

Last shot of the game should be stars to make a statement, to ask or wonder where humanity went when it left Earth


Mentions of old, forgotten tech – most of it in disuse, since the batteries would have run out years ago.

Aesthetic Inspiration: Deltarune

Deltarune is an exceptional indie game made by Toby Fox, and its aesthetic is a beautiful 2D pixel art form. The backgrounds are vibrant, the rooms have incredible detail, and the colours picked always match the mood and tone. The Card Kingdom is filled with black, purple, and orange – spooky colours to match the spooky atmosphere without it being dire, akin to Halloween. Cyberworld is filled with blue, cyan, and green – colours associated with technology. Both worlds are also tinged darkly with black and deep blue being often used to visually portray the "Dark World". And the real world is in warm orange and yellows, making home feel home.

There are, however, some drawbacks to drawing inspiration from this style. Bitsy only allows 2 colours, so I won't be able to do any intricate shading or play with colour gradients. My colour palette will have to be picked carefully, and reflect the mood for the whole game well, even as we slip from lighthearted to sombre.



Aesthetic Inspiration: A Short Trip

This is the game I have been drawing most heavily on for inspiration. The art is a beautiful 2D sketch style, with many different and interesting settings to race through. While I am limited to pixels, not pencil sketches, where I draw inspiration is in the setting and movement. The progression is very simple: from left to right, occasionally stopping to let passengers aboard the tram.

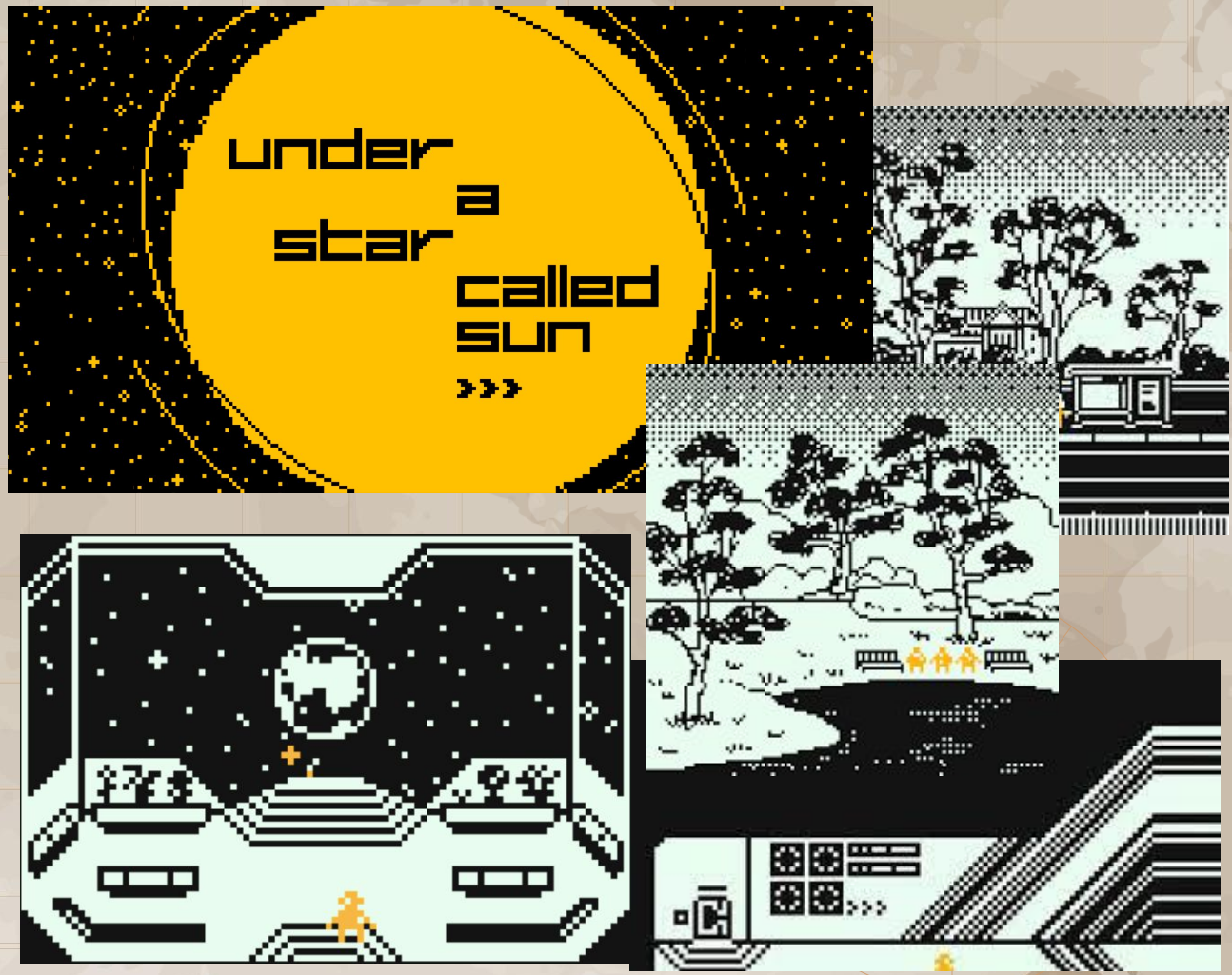
I also want to present my Bitsy game from left to right, because it will have an affect on time as well as space as a chronotope. Since I want to explore all manner of English history, it only makes sense to do this chronologically. When the player progresses, from left to right, they see the rise and fall of humanity, and glean clues about what I am implying happened.



Aesthetic Inspiration: Under a Star called Sun

While A Short Trip is the game that inspired me the most heavily, and Deltarune is my preferred style of pixel art, the most useful game I've analysed is probably Under A Star Called Sun. As a Bisty game, it has all the same limitations as my own game. It even carries a similar theme of the loss of humanity – although in Under a Star Called Sun, this is a metaphor for estrangement of any type.

The landscapes are incredibly detailed, with instead of a strictly top-down view that many Bitsy games opt for, offers more of a side view. The detail gives vibrancy and life to the game, and the characters are pops of sunny yellow in contrast to the drab backgrounds, making them easier to see from a player's perspective, and from a metaphorical view, show they are the ones the character truly misses.



Historical Research: 1000s



Winchester, where I'm studying, boasts some truly incredible feats of old-fashioned architecture that's perfect to base a part of my game on, considering I am taking the player on a wander throughout English history. The photos I have taken are of Winchester Cathedral, one of the largest in Northern Europe — it has a gorgeous Gothic style to it, very elaborate. And as construction started in 1079, it finally being completed in 1532, this building – or its inspiration thereof – should allow me to show mediaeval England and 500 years of history in one building. Since it's a small game, I don't need to go into any great detail and historical relevance. The players should be able to infer the fact themselves, while the crow avatar remains blissfully oblivious.





Observing mediaeval architecture is one thing, however recreating it as a pixelated sprite in a small videogame is quite another. I had no idea where to even begin depicting all its massiveness and complexity. In the end I had to simplify a lot, especially considering the timeline I was on – however, I still think I was able to capture its grandness and scale, even with diminished detail.



Making the Bisty Game

I started with one place idea for each period, to have this one place be symbolic of the entire period, as I slowly walk the player throughout English history. Once I had an idea each, I roughly drafted out the rooms, with a random scribble for the customizable box, just to visualise all the layouts and what I wanted. Then, I went back room-by-room, and started to fill in the details. This was a long, very painful, very arduous process, as I wasn't making tiny repeatable sprites but huge, hulking structures. I realised I'd have to sacrifice a lot of embellishments I'd made in my head if I wanted to get it done at all – however, I am very happy with the way it turned out. Each "room" is fully illustrated, with a couple of collectible sprites to find and interact with too!

Rooms:

Time Period	Description	Collectible/Interactible
1000s	Cathedral	Coin, Crucifix, Bible
Industrial Revolution	Factories	Screws and bolts, Spanner
Victorian Period	Town/Shops	Shopkeeper, Manhole Cover
Modern	City	Car Wheel, Empty Bottle
Futuristic	Rocket Launchpads	Flyer
End	Cliff	Star, to ask the titular question: where did they go?

Colours

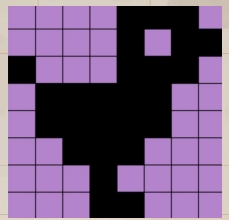
In Bisty, you are only allowed to use three colours: one for the background, one for the objects, and one for the avatars and sprites. This limit means you have to get very creative with colour choice, and choose wisely. Initially I thought that separate "rooms" in Bitsy would allow colour changes, and was going to make a sunset gradient starting from light to twilight. However upon discovering that I had only 2 to choose, it became much more difficult.

The avatar colour/s was easy. Crows are entirely black. The colour also prevents the sprite for being mistaken for any other bird, since it's a generic bird shape.

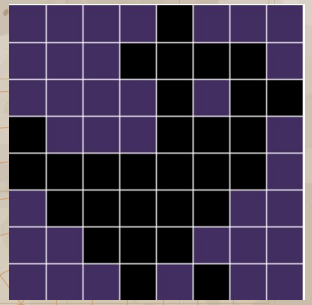
The atmosphere was harder. I still wanted it to carry the sunset theme however, so I needed to get creative. I chose one dark colour from a sunset, and one light colour, and combined them: purple and orange. The orange would represent golden hour; the purple twilight. Additionally, the purple would act as the shadows to the orange's light for gradients within the maps. Then all I had to do was carefully switch from mostly using orange, to mostly using purple, to a nice, and slightly spooky, effect.

Avatar





As it turns out, crows are devilishly tricky to get a photograph of. Every slight movement sends them into flight. Eventually I managed to snag a photograph, and it helped me put life into the sprite. Previous attempts had my avatar looking very stiff and unlifelike.



In the end, while a little chicken-shaped, I made the above through a lot of trial and error, and the black colour definitely adds to the "crow" effect. The background colour here is slightly altered for the final game, because here it is much too dark, you almost can't see the bird properly.

Idea

Rough

Finished

Home, the Crow's Nest

Outside Home, the Tree

The Cathedral Exterior (1000's)

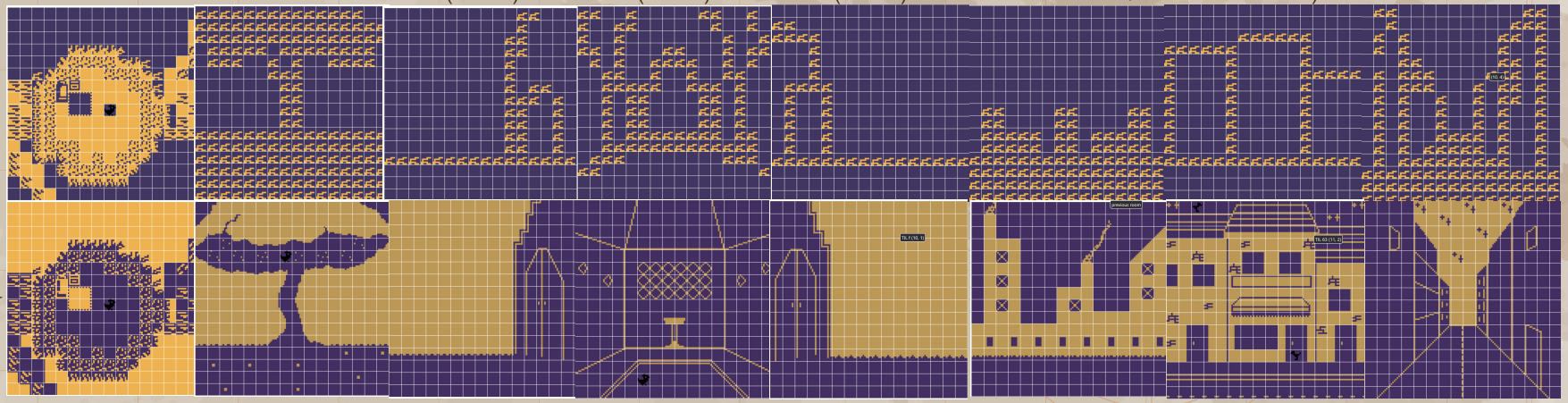
The Cathedral Interior (1000's)

The Cathedral Exterior (1000's)

Factories (1700s, Industrial Rev)

Town (1800s, Victorian)

City (2000's, modern)



Idea

Rough

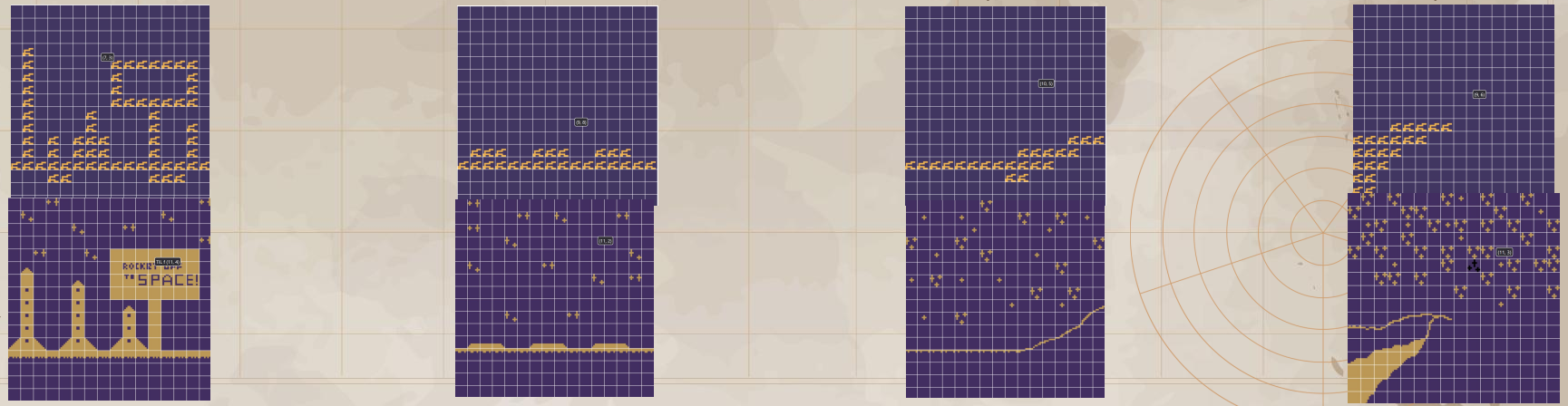
Finished

Launchpads, Cyberage

Empty Launchpads, Cyberage

Grassy Hill

Grassy Cliff



Making the Twine Game

I had a lot of trouble coming up with a concept for the twine game, when I thought it would be the easier game to write. Now that my one story idea had been turned into a Bitsy game, I wasn't entirely sure what other possibilities could exist for this world. What else would a crow actually do in this world? What would their daily life look like – their struggles and hopes? This wasn't something I had entirely explored before. So I started where I usually do when beginning any writing project – the analysis of specific words and phrases.

All I had for this second game so far was a feeling of sadness. So I started to collect words that sounded sufficiently melancholic:

Lachrymose (Lachry-crows?)

inducing tears; sad.

I've been fixated on the word "lachrymose" for quite some months now; I enjoy the way it sounds.

Macabre (Ma-caw-bre)

disturbing because concerned with or causing a fear of death.

Similarly I noted the word "macabre", because it sounded a little like a bird (although I'm almost certain I'm actually thinking of the macaw bird). I also link it to the phrase "Danse Macabre", a poem by Hans Holbein the Younger written in 1538, about a dance of death.

Melancholy

a feeling of pensive sadness, typically with no obvious cause.

Melancholy feels like the offspring of the words lachrymose and macabre; they contain a lot of similar sounds and words. And melancholy is definitely the air I'm going for.

Murder of Crows

a group of crows.

A phrase that alludes to the symbolism of crows being that of death and decay. While sufficiently dark, I don't really know what the crows would imply to have murdered here.

After examining these words, it then struck me that while satisfied with the Bitsy game, I didn't really feel as though I had explored the scope of the world in much depth. It was an overview, not an examination. So with my Twine game, I decided I wanted to break down these environments more fully, now only restricted by imagination, since I don't have to visually build them.

Ozymandias

"Ozymandias" is a poem by Percy Shelley, and as a romantic poet, he focused on the simplicity of the past and the beauty of nature, those subjective and emotional values contrasting with the values of the enlightenment period. They are also values that coincide with themes in my own game. And since "Ozymandias" in particular is about legacy, and Twine is so text-based, I want to take a leaf from Shelley's poem and analyse it – perhaps use some of its techniques, or make reference to it at some point.

The poem tells the story of a man who meets another, who recounts how he discovers the semi-destroyed statue of an ancient Pharaoh. The man goes on to describe it, picturing someone ironfisted and cruel, with the arrogant words declaring himself King of Kings on his pedestal, and for people to look upon what he has created and feel intimidated, cowed by his brilliance. This is contrasted by nothing with the statue. Whatever was there – if there was anything – is long gone now. Shelley is remarking upon the futility of legacy and power. That, one day, we will all be swallowed up by the sands of time.

I met a traveller from an antique land
Who said: "Two vast and trunkless legs of stone
Stand in the desert . . . Near them, on the sand,
Half sunk, a shattered visage lies, whose frown,
And wrinkled lip, and sneer of cold command,
Tell that its sculptor well those passions read
Which yet survive, stamped on these lifeless things,
The hand that mocked them, and the heart that fed:
And on the pedestal these words appear:
'My name is Ozymandias, king of kings:
Look on my works, ye Mighty, and despair!'
Nothing beside remains. Round the decay
Of that colossal wreck, boundless and bare
The lone and level sands stretch far away."

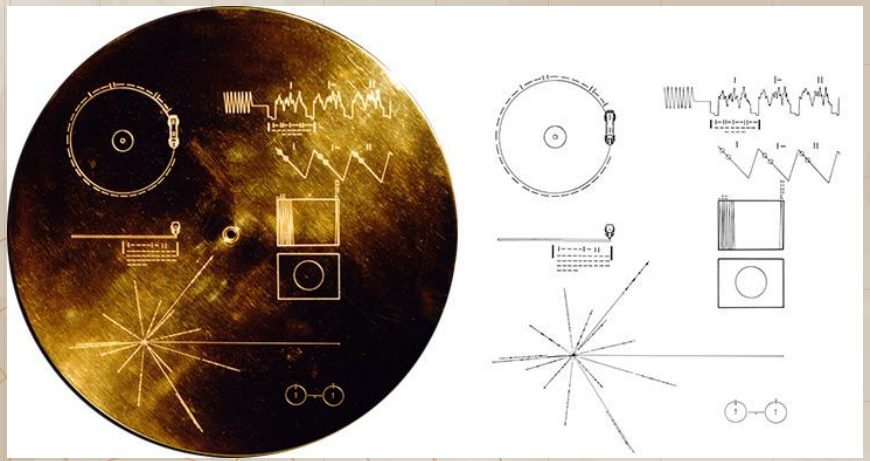
The "Ozymandias" in the poem is a reference to King Ramesses II, an Egyptian Pharaoh from 1279-1239BC, who used the throne name "Ozymandias". At the time of Shelley's writing, his statue was unearthed, so the subject was incredibly topical for its time. Additionally, Shelley was probably also influenced by King George III, who was seen even for his time as a tyrant, earning himself the nickname "Mad King George". His tyranny and legacy no doubt had an impact on Shelley while writing Ozymandias, as it engages with the futility of power – particularly power enforced through violent and tyrannical means.

My own game will also deal with legacy – the legacy of the human race. I want to speculate on things that might have destroyed us, or will destroy us in the future. In particular, the symbolism of leaving a world as a rotting husk, and the next race being that of those who survive by scavenging, is not lost on me. However, I also know that the Earth will long outlive us, and our creations will slowly be buried or weathered until there is nothing left to scavenge. Most of all, while I would like a melancholy game, I'd also like to leave a spark of hope. Humanity is not entirely a self-destroying Ouroboros, and as much as we do destroy, we do create as well – even if this will eventually be lost.

The Golden Record

Most of humanity already knows that the sun will eventually explode, taking our beloved planet with us, and the human race will eventually wipe out whether by our own hand or by natural disaster. However, that hasn't stopped us from trying still to leave little pieces of us behind for others; akin to families passing down precious items, I think it's in our nature. The Golden Record was a NASA project – a time-capsule displaying as much of humanity as can possibly be contained, and shot out into space on the Voyager spacecraft. This was done in the hopes it would be found someday, in the far-distant future, and interpreted to be understood. So a little piece of ourselves can live on.

The surface of the Golden Record are instructions on how to play it. On the top left hand is a recognisable etching of the phonograph and its stylus, which is set in the correct position to play from beginning to end. Written around it is the time of one rotation, written in binary arithmetic, and expressed in the time period associated with the transition of the hydrogen atom – this is so any creature that picks it up will hopefully be able to translate it. Additionally depicted are how to construct pictures from recorded signals, and a map of where our location is in the recorded universe so far.



NASA (2019). *Voyager - The Golden Record*. [online] Nasa.gov. Available at: https://voyager.jpl.nasa.gov/golden-record/.

The record itself had four categories preserved within it.

Images:
The images on the Golden Record show our sun; cells and cell division; the anatomy and diversity of human bodies; and a number of picture of humans enjoying such activities like running, eating, and teaching.

Music:
The music on the Golden Record is a collection from around the world, from Beethoven to Peru panpipes and drum, to the Pygmy girls initiation song.

Sounds:
The sounds are a collection of that you might find on Earth. Rainfall, waterfall, volcanic rumblings, a dog barking, a horse dragging a cart, footsteps, heartbeats, and laughter.

Greetings:
Greetings from around the world have also been burned onto the record, starting with the ancient language of Akkadian to the modern Chinese Wu. Messages saying hello, wishing well, and sending messages of hope of good health and asking if they, too, are well. This is my favourite part of the golden record.

After examining so many accidental time capsules of history, I here realised humans might have left behind things on purpose to be discovered.

The Lachrymose of Crows

Setting

You are a crow. Your daily life is dictated by curiosity and a certain affinity for things that shine. However, you have inherited a second-hand world; a world already used and taken advantage of and ultimately left rotting. This would bother you, if were you not a crow, and prone to take advantage of the dead. You do so love the rot humans have left behind. Where will you go today?

The Cathedral

Explorable Areas:

1. The Nave:
   Pews, Ceiling, Altar, Bible
2. The Choir:
   Music, Hymns, Echo, Stain-Glass Window
3. The Graveyard
   The plain grave, the cross grave, the angel grave

Humans were destroyed by their differences.

The Factory

Explorable Areas:

1. Manufacture
   Conveyor belts, automated machines,
2. Storage
   Shelves, Product,
3. Transport
   Vehicles,

Humans were destroyed by capitalism and greed

The Town

Explorable Areas:

1. The old well
2. The old pub
   The restaurant, the bar, behind the bar
3. The old museum
   The animal exhibit, the plantlife exhibit

Humans were destroyed by global warming

The City

Explorable Areas:

1. The City Centre
   The shopping mall, the tramline, the artpiece
2. The Skyscraper
   The ground floor, the rooms, the top floor
3. The River
   The bridge, the boats, the pollution

Humans were destroyed by apathy and aversion. They'd rather look away.

The Spaceport

Explorable Area:

1. Mission Control
   The control panel, the the camera feed
2. The Empty Launchpads
3. The Left Rocket
   The engine room, command, the observation deck

Humans were destroyed by their curiosity and innovation

The Cliff

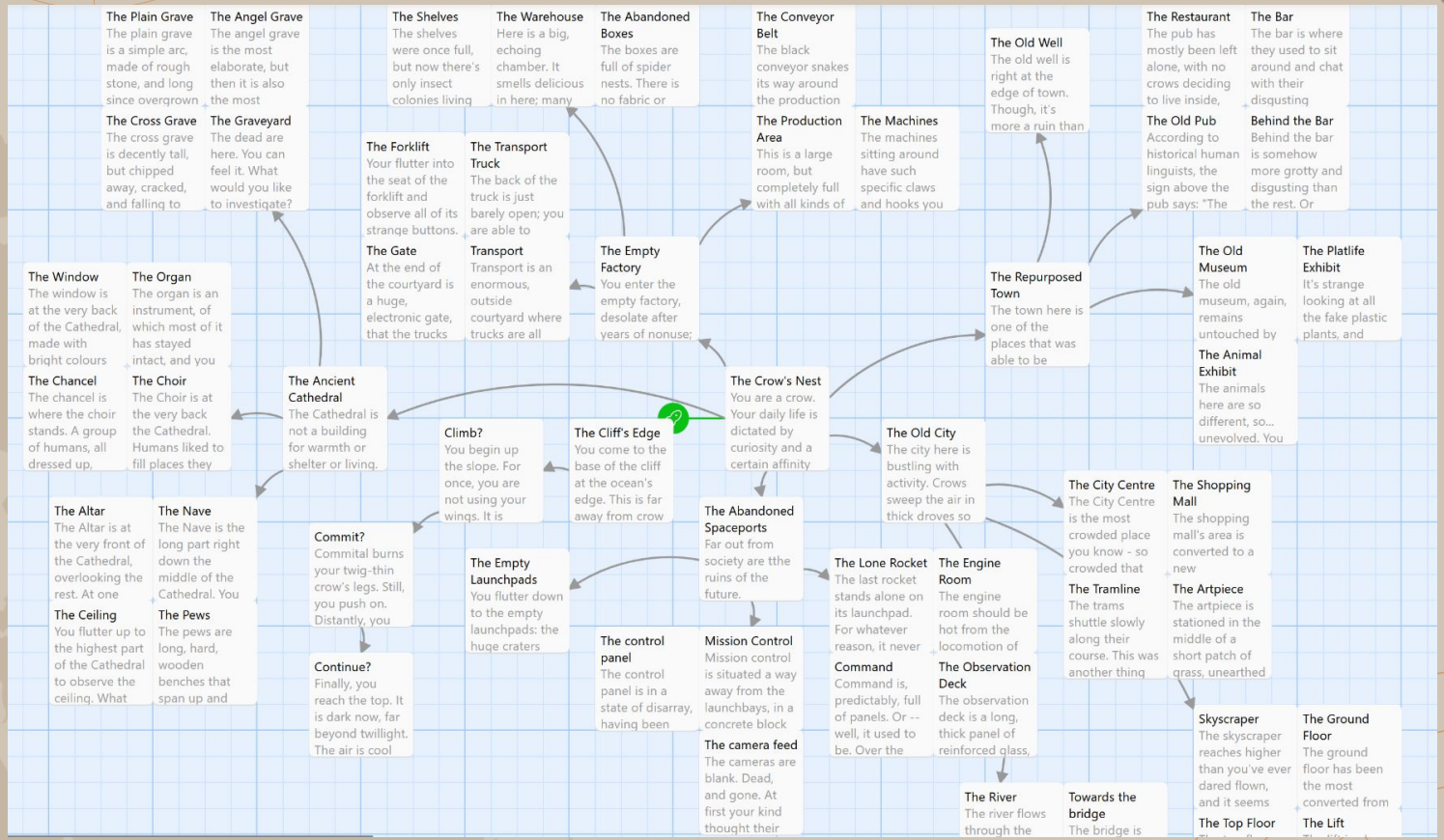
Explorable Area:

1. The base
2. The slope
3. The cliff's edge

We don't know why humans aren't around anymore. But a species that managed to build so much couldn't have been all bad.

Twine Layout

Initially Twine was much easier than Bitsy to work with, however due to time constraints I wasn't able to put in quite as much as originally wanted. I'd like to have added in pictures and different colours to the text, but couldn't quite figure out how to do so.



This is what the first draft of the game looks like currently. There are many paths because, although time-consuming, I wanted to put emphasis on player exploration. I tried to keep to a pattern in which every previous Bisty "room" would have 3 areas of exploration, which in turn would have 3 objects of interest. Each tie back into a theme specific to the room, as the crow ponders on the human's demise – and the end has a hopeful, bittersweet feel to it.



Itch.io

For viewing, I have made an Itch.io account and publicised both Twine and Bitsy games to it. While my account is a little sparse (and under-decorated) right now, hopefully by the end of 2024 I'll have made a short bundle of quick, fun games to play! #

My account name is PolygonPatchie, and my published games are linked below.

Where Did They Go?:

https://polygonpatchie.itch.io/where-oh-where-did-they-go

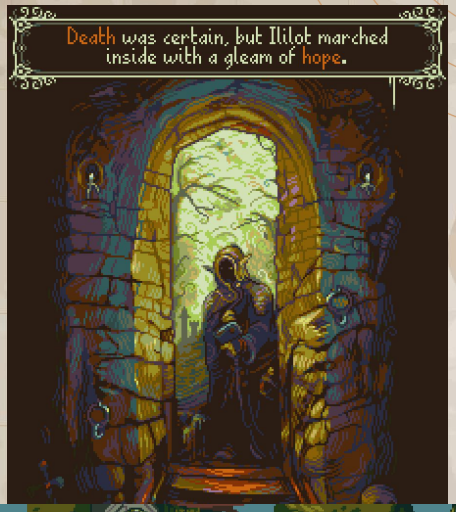
The Lachrymose of Crows:

https://polygonpatchie.itch.io/the-lachrymose-of-crows

Pixel Artist Analysis: Pedro Medeiros

I discovered artist Pedro Medeiros when playing the videogame Celeste (2018), in which he was lead pixel artist and designer for, and considering Celeste is one of the most beautiful games I've ever played, I started to look into his other work. He creates a variety of pixel art ranging from full-blown pieces to miniature sprites, however all with an eye for detail that guides the eye easily as to what's happening in frame. Even the smaller sprites have a range of colour on them, demonstrating the drip of candle wax or the texture of a plague doctor's mask. I particularly love the way he creates backgrounds – not distracting, but not plain, able to embellish the scene and tie everything together. How, despite the stiff nature of pixels, all of his works seems effortlessly fluid, with cohesive colour aesthetics and an affinity for green palettes.

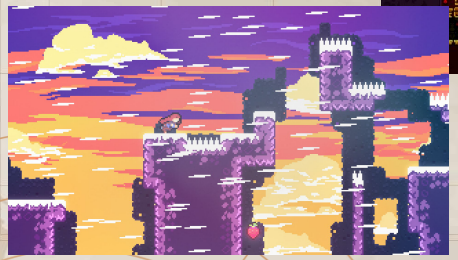


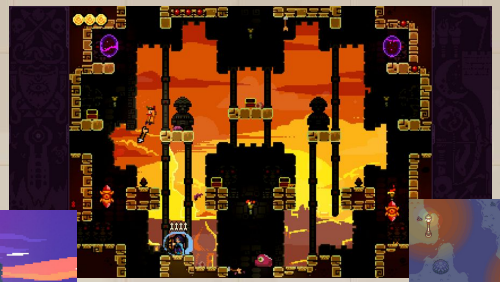


Most recently he is working on the games Neverway (a dark farming RPG) and Earthblade (an exploring action platformer); each game with a distinct style totally unique from Celeste yet still with his eye for detail. In the past he has also worked on Towerfall (2013), a multiplayer indie action game developed by the same company as Celeste (Maddy Makes Games and Extremely OK Games), and the game since then has become broadly popular, likely contributing to the success of Celeste.

saint11.org. (n.d.). *Saint11*. [online] Available at: https://saint11.org/.

Celeste





Towerfall

Neverway





Pixel Artist Analysis: 5kraD

5krad (or Kim) is a Korean pixel artist I stumbled across last year upon doing research for a college project. They are a very small, quite niche indie game developer, however one I have an enormous love for, with their talent for making cosy, domestic settings. Each building created by them are rich with detail and truly feels lived in, captured by an atmosphere only pixel art can create. I have taken a leaf from their book not just in the way I want my pixel art to look, but for my environment art in general: elaborate, relaxed, and homely.

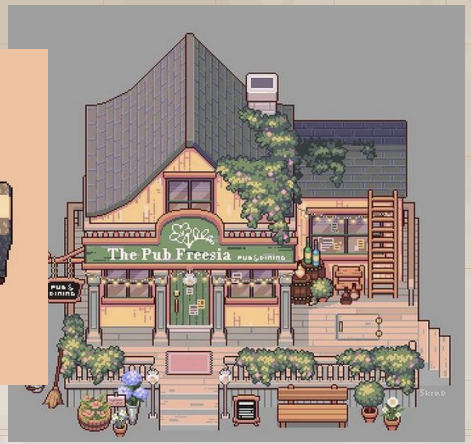


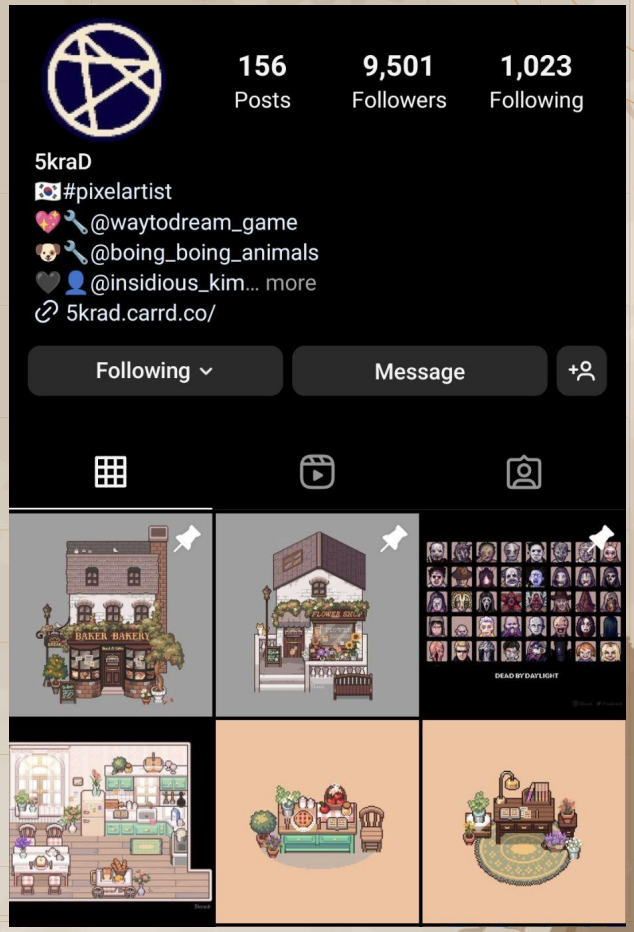
As well as being a talented environmental artist, they also make sprites in an as-yet unfinished game called Boing Boing Animals, a virtual pet-collecting game that will eventually be out on mobile. Each sprite is cute, and their little squishy animations make them yet cuter, as if you can reach through the screen yourself and squash them.

www.instagram.com. (n.d.). *Instagram*. [online] Available at: https://www.instagram.com/5krad/ [Accessed 1 Jan. 2024].









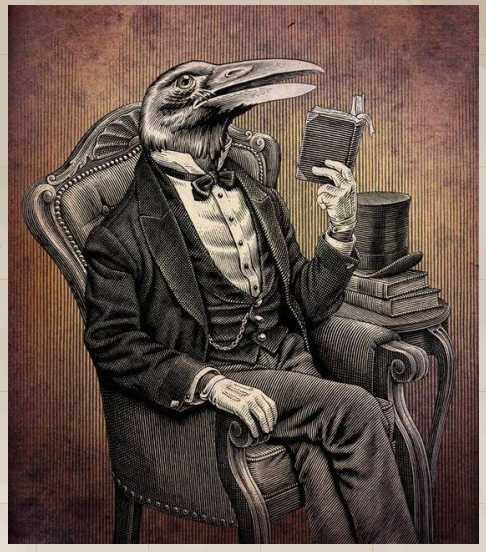
One: Anthropomorphic Crow

Despite not being part of the design, I still wanted to explore what a crow might look like with some anthropomorphic ideas and human clothing – although realistically, I don't think crows would ever wear clothes due to their lack of hands, and their feathers are already suited to keeping out water. I was very taken by 19th century garments, as crows were often used as symbolism in Gothic literature, which was a huge movement in the 19th century. As such there is no shortage of crows being depicted as aristocratic gentlemen, a concept I find rather charming.

Inspiration:







Result:



Two: Gravestone

Gravestones are a symbol of preservation – of respect for the dead – so when a gravestone is desecrated or abandoned, it conveys a sense of tragic loss. Here I wanted to depict a plain grave over something fancy, to represent the common man. It is unscrubbed and covered with moss and foliage to show its abandonment. Vines obscure the writing, and for the writing itself I've drawn made-up runes, symbolic of the fact that our language would have long since faded into obscurity now.

Inspiration:

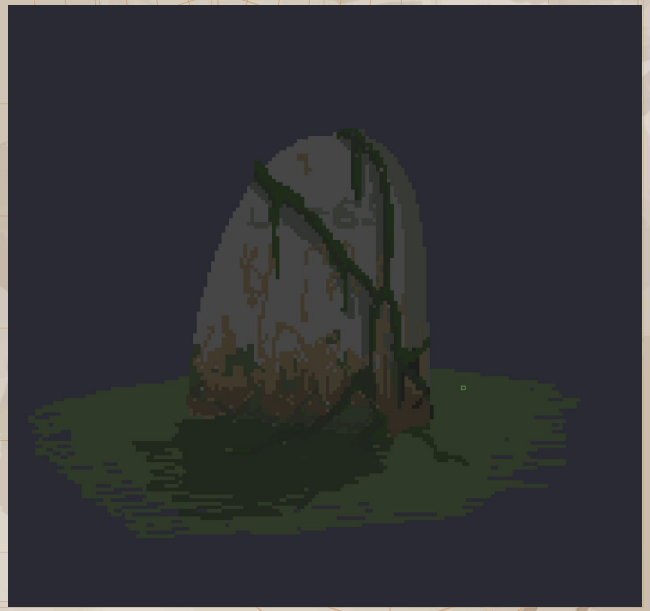








Result:

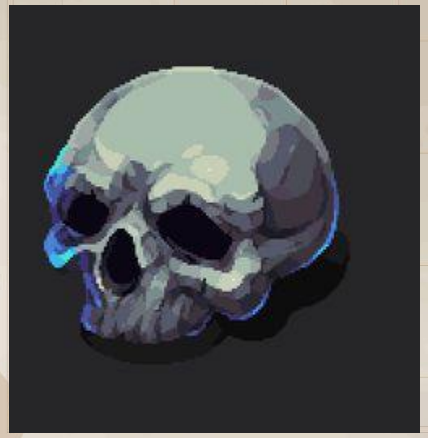


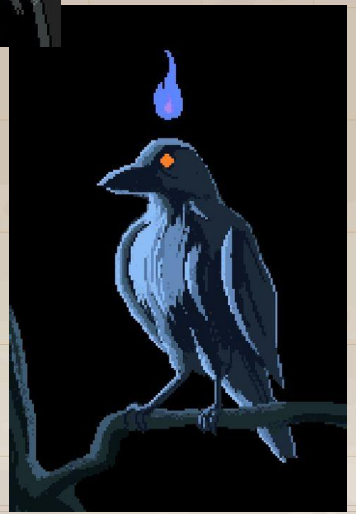
Three: Skull

Inspiration:











For my third I wanted to make a human skull. Not a terribly realistic one, but one that would fit in with the artstle of my Bitsy game. The cartoony factor shows the normalcy of death in this world – that it's not something feared and revered, but something so regular it's hardly worth noting. Originally I wanted to do something more abstract about crows and death, however this is what I settled on in the end.

Result:



Four: Flora

I was captured by depictions of flowers below, and wanted to create something similar. I enjoyed the dark background, and the vibrant colours making them appear to glow. So keeping with my melancholic theme, I decided to keep the same concept with my own flower of choice: a Black Rose.

Black roses symbolise death, which keeps with the corvid theme of the macabre I've been keeping to thus far. They also represent the crow's dark feathers. However, a dark-on-dark background would make less of a "glowing" effect, and anyhow the concept felt too similar to what I'd taken inspiration from. Instead put my rose in a jar, and as a final touch, at the very bottom illustrated the skull of a bird. The rose, symbolic of nature's constant cycle of life and death; the jar, left behind by humans; and the skull of the crow all tie in more nicely together than I'd originally intended, and I'm quite pleased with the outcome. My only real frustration is that the rose looks a little indistinct.

Inspiration:



Result:

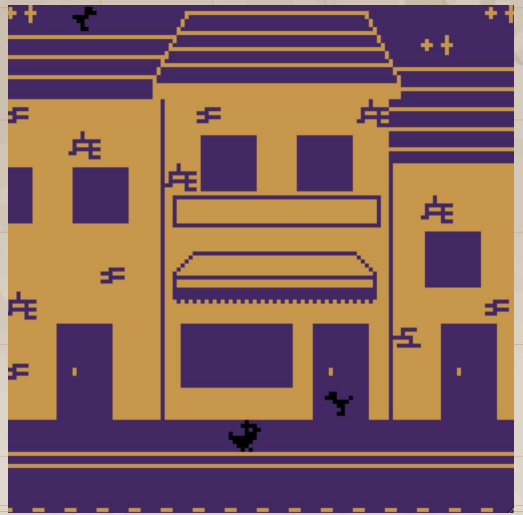


Five: Bakery

For my last piece, I just wanted to explore creating a building and what it would have looked like in its prime, before the crow evolution. This specific shop is one of the areas in my Bitsy game re-imagined in that role. I drew heavy inspiration from 5kraD's style here. I was also able to experiment with more colours, since Bitsy was quite limiting – although perhaps didn't look at my reference enough, so the two structures look a bit different.

Inspiration:





Result:



Evaluation

My first project in Uni gave me a lot of freedom of expression – so much I almost didn't know what to do with it all. During college I was so used to being given bullet-pointed lists with criteria to check off that I'm still not entirely sure if I've hit the standard; I have yet to know the expectations here. However, what college did teach me is how to make a portfolio that details your creative process in its entirety, and I feel I have at least accomplished that.

My favourite part about all this has been the readings. Not to say I've never fallen behind, but it's fascinating reading through dev logs and hearing industry professionals talk about the reasons behind good game structure, narrative, worldbuilding – going through papers on ludology and narratology and game mechanics. These are aspects that I didn't think I'd find interesting compared to the passion of project-making, but I was very intrigued – and highly opinionated on many of them.

What was surprisingly tedious to me was actually the required videogames set alongside the readings. Reading is easy, it's just some words on a page, and I can set them to be read aloud to me while I'm doing something else if I like – but playing games requires a level of effort and focus, even very simple ones. I'd grow tired of them in a few minutes and feel like giving up, though it feels very ungrateful to be complaining about having to play videogames for your homework. Then my least favourite part was the actual creation of both Bitsy and Twine games. I enjoyed coming up with the ideas; with researching myself into rabbitholes and scheming grand concepts, but then I had to open up the game engines and start it. Bitsy I loathed from the beginning. The 2-colour orientation still puts me off and I despise only being able to paint in a tiny window of the game at a time; it was so slow to put together, although immensely, and almost savagely, satisfying each time I was done with a room. Even then it ended up more simplistic than I would have liked. I looked forward to the Twine game, as writing has always come quite easy to me, so I didn't have trouble planning out something longer – but the writing process was so completely painful I almost wish I hadn't. Each segment had to tie back into humanity's demise, and the entire project ended up more long-winded and pretentious than I'd anticipated. I'm still incredibly proud of both projects, and of being able to finish them, however wish I'd known the game engines better, and what was to be done with them.

Though it had its pitfalls, my first module has been nothing but satisfying. I hope to continue with the same passion for the next module as well.

We Move People

Module 2

Brief

Our second task was a group project, in that we would all fully ideate, iterate, and create a 2D prototype game in Unity. In 2 months, this is a daunting task, however one I am willing to take on to push my boundaries, improve my teambuilding, and garner a greater understanding of player's needs out of game mechanisms. By the end, I should not only have built a game and learnt to code in Unity, but also what game mechanics bring to the table, how I can subvert them, and how I can make a mechanic intriguing to build a premise off it.

Subvert the norms by reimagining a classic video game mechanic, to explore the communicative power of movement and interaction.

What is subversion? What is considered the "norm" for an industry like gaming?

What are some examples of video game mechanics? How have they evolved over the years with technology?

How does movement and interaction give information to the player? How do I communicate effectively without making the setup too complex?

My group – group 1 – consists of myself, Esi Amoah, Guy Porat, Joe Roberts, and Olivia Briginshaw. Before anything in a videogame – before story, before aesthetic, before characters – the way you play it has to be considered. The mechanics of a game is what set games apart from, say, a visual novel or a movie, and as such I believe they are the most important part. After all, if players aren't engaged, is it a game at all?

Deliverables:

- One game prototype, built in Unity.
- One portfolio of work, detailing ideation to creation.

Roles in the Game Industry

As my group have to find where we're going to fit in to make our prototype, I'm going to look at industry roles, not only to help with the project, but to broaden my knowledge of the industry itself. After all, if it's something I am going to be a part of one day, I ought to know how it runs.

Pre-Production

Pre-production is the process of deciding what the game is going to be about and how it's going to be made. It contains jobs such as concept artists, script writers, financial advisors, game runners, and game devs/designers. These first few people will help make a prototype for the game, and decide if there's a place in the market for it.

Production

Production is the part where the game gets made. It is the largest and most time-consuming part, where the initial ideas of the game are either dropped or carried forwards, depending on factors such as time, money, and resources, such as programmers, level designers, 3D modellers and riggers, animators, FX artists, sound designers, and testers. By the end of this stage the game should run, and be ready for the public.

Post-Production

Post-production happens after the game comes out. Despite being finished, there will still be bugs to fix and patches to be made, especially in larger games. Game devs are kept on to fix these problems, as well as meetings held to decide what worked and what didn't. All design documents, assets, and code will be stored, in case they are needed again.

Production Department

Will organise their production and ensure goals are kept within resources and time constraints. Roles include: assistant game producer, community manager, games producer, games publisher, marketing executive, etc.

Art Department

In charge of creating the 2D and 3D assets, characters, and environments. Roles include: 3D modelling artist, concept artist, environment artist, etc

Programming Department

Creates the game engine, game AI, and code. Roles include: AI programmer, engine programmer, gameplay programmer, generalist programmer, physics programmer, network programmer, etc

Animation Department

Responsible for the movement of any kinetic asset. Roles include: animator, technical animator, rigger, etc.

Design Department

Separate but related to the art department, the design team dictates the aesthetic of the game, and determines how it will play. Roles include: gameplay designer, lead game designer, level designer, user experience designer, writer, etc.

Audio Department

Manages background music, voice-acting, and sound effects for the game. Roles include: audio programmer, music composer, sound designer, etc.

Technical Art Department

Bridges the gap between programmers and artists. Roles include: graphics programmer, technical artist, video effects artist, etc.

Quality Assurance

Manages the final quality of the game to ensure there are no glitches or bugs. Roles include: games tester, quality assurance build engineer, etc.

What is a Mechanic?

In videogames, mechanics are the way in which you control the player. They are an action or set of actions for the player to perform. In this sense I think mechanics are the most important aspect of a game, because they serve the most vital role: how you play. If you're not really playing, what's to differentiate it between a visual novel, or a film? Creating engaging mechanics should be step 1 of making a videogame, always, and has been a rule since the arcade days of gaming.

Verbs: what the player is doing. Eg; Explore, destroy, build, survive, steal
Rules: why the player is doing it. Eg; rock beats scissors.
Mechanics: how the player does it. Eg; walk, dialogue, shoot.

Standard videogame mechanics have been so long unchanged that there's almost a specific language around them now. Most seasoned players don't need to be told to press A to jump; they know it instinctively. These skills are often transferable by genre. After all, there isn't too much difference from one shooter game to another, so if you're good at Overwatch for example, then chances are you'll be able to pick up Valorant, or Apex Legends, and have mastered it in a short amount of time. This "langauge" is entirely based around mechanics, and is rooted in how they've evolved over the years.

Sicart, M. (2008). Defining Game Mechanics. *Game Studies*, [online] 8(2). Available at: https://gamestudies.org/0802/articles/sicart.

Evolution of Game Mechanics

Mechanics have been often held back by limitations in soft/hardware, which is why the earliest videogames such as Pong and Tetris had such simple mechanics. The franchise of Super Mario games all stemmed from the 1983 platformer Mario Bros, where its scope was limited by what arcade machines could do. As technology evolved, mechanics were allowed to become more elaborate, along with the graphics. This is best demonstrated in fighting games. Street Fighter (1987) is simple, with a short range of buttons for your moveset (both fighting and dodging) and a healthbar. Compare that to Super Smash Bros: Brawl (2008), which has a wider range of movesets, the "shield" button, a special attack to obliterate enemies, and a whole lineup of objects to use against each other such as clubs and power-ups. The genre had evolved – and so did the mechanics.

Hierarchy of Game Mechanics

Not all game mechanics are created equally; indeed there is a hierarchy of importance based on sustaining a player's interest and motivation.

1. Core Gameplay and Core Game Mechanics
    a. The set of activities the player will undertake most frequently, and is critical to getting to the win condition.
2. Core Meta-Gameplay
    a. New activities that share with the core gameplay mechanics; or core game mechanics with new semantics. This may not go towards the win state of the game, but will enrich the payer experience.
3. Satellite Game Mechanics
    a. Mechanics that enhance already-existing activities, either by adding new features to an existing mechanic, or by modifying an existing features. This also enhances player experience.

Fabricatore, C. (2007). *GAMEPLAY AND GAME MECHANICS DESIGN GAMEPLAY AND GAME MECHANICS DESIGN: A KEY TO QUALITY IN VIDEOGAMES GAMEPLAY AND GAME MECHANICS DESIGN CONTENTS.* [online] Available at: https://www.oecd.org/education/ceri/39414829.pdf.

Different Mechanics in videogames

- Shoot
- Jump
- Run
- Survive
- Craft

In videogames, mechanics are the way in which you control the player. They are an action or set of actions for the player to perform. I think mechanics are the most important aspect of a game, because they serve the most vital role: how you play. If you're not really playing, what's to differentiate it between a visual novel, or a film? Creating engaging mechanics should be step 1 of making a videogame.

What is Subversion?

Subversion is the act of taking one's expectations and giving an outcome that wasn't anticipated. So to understand what would be considered "subversive" to the world of videogames, we have to first establish what is "normal". For such a massive industry as games design, you'd think there would be an abundance of creativity – and while there are many subversive and imaginative games out there – most videogames are made by companies, who run for profit, not art. What sells well for one game will be copy-pasted to the next dozen copycats until the market is oversaturated, and very few bother to change much but aesthetic.

AAA Games

AAA games are from the biggest companies in gaming – they are huge teams of people, but they don't often like to take risks. There is little innovation between minor tweaks in these games, especially mechanic-wise. Think of most shooter games released by AAA studios. They all contain roughly the same goal and rules: shoot others, don't get shot, heal, and reload. Perhaps different characters will have different abilities, but no shooter game has done anything truly unique and subversive for years, not even so much in style (realism reliably sells, so realistic games are what's made). And since AAA studios often set the standard for video games, their riskless approach to innovation sets the norms for video games.

Mobile Games

Mobile games could have been a huge forward-step in the accessibility of videogames. A phone is necessary to modern life, and in turn that means people could have access to thousands and thousands of games in the app store. However, while there were some hugely influential games back in the late 2000s to early 2010's (Jelly Car (2007), Temple Run (2011), and Candy Crush (2012) call to mind), mobile games have largely fallen out of fashion due to the complete oversaturation of the most popular games. There are an overabundance of lazy match-3 games trying to profit off the popularity of Candy Crush; Temple Run similarly spawned a wave of endless runners that have a similar look and style. And if it didn't create a lot of copycat games, then the franchise itself discontinued, or became unplayable. Jelly Car and its sequels were discontinued and removed from all stores in 2014; Candy Crush has got so many new features from competitive ranking to "tickets" to the everyday spin of the wheel you have to click through five popups to play the main part of the game; and one of my favourite games as a child, Angry Birds Space (2012), has been completely discontinued and removed too – and as insult to injury, Angry Birds 2 only allows 5 lives, and is similarly riddled with ads and payments. Mobile games are now associated with ads and cheap graphics and profit. Most people I know only have one game on their phone, that they've either hung onto from nostalgia or has somehow not been tempted to go down the route of quick profits and adspace.

Historical Evolution

There are also a lot of "norms" in videogames that go back a few decades. Platformers, for example, came from Donkey Kong (1981) during the Golden Age of videogaming when they were run in arcade machines; as such the technology was limited. As time has gone on there have been new innovations to the genre of platforming, but the essence will always go back to its arcade roots. There are only so many ways to innovate someone running and jumping. Similarly, hardware for videogames has also reached an expected standard: two joysticks; two triggers on the top; a D-Pad; a quartet of buttons – all of these elements feature in the Playstation, Xbox, and Nintendo Switch controllers, which are the most popular modern consoles. One of my university tutors, Dr. Adam Proctor, recently took us on a trip to an art exhibit in the Nutshell in Winchester, and showed us a 3D printed console similar to a Gameboy – except with a tiny crank on the side. A crank, for a videogame! The idea delighted me. It felt new. It felt subversive. It felt exciting to interact with.

Videogame Subversion

In my opinion, to be doing something truly new with the videogame medium, you have to subvert the mechanics. They are what you control the lens of games with; they are how you interact, play, explore – everything. You can write an incredibly subversive story, but if it's in a simple choice-based videogame format, then only the story will be subversive – not the ludic element, the element from which the game is born. This can be done either through the software, doing something new with the way players interact with the screen, or hardware, doing something new with the controls themselves.

Mechanics in Storytelling

In my opinion, a good mechanic makes or breaks storytelling, and not just in videogames. My favourite novels have had an interesting plot device – or mechanic – to serve the narrative and tie into thematics. These mechanics make books interesting, unique, and above all, engaging. What I hate more than anything is mechanic or a system that's been done before – because then even if it's well-written, it's forgettable. As someone who doesn't play a lot of videogames, I can still recognise the importance of a good mechanic, and have tried to break down some of my favourites below.

Babel, or the Necessity of Violence: An Arcane History of the Oxford Translator's Revolution by R.F. Kuang

This is R.F. Kuang's best book to date, highlighting the impact and the exploitation of immigrants and colonies in the British Empire, with the most unique magic system I've ever read about that perfectly encapsulates the themes. This system – or this *mechanic* – manages to not only engage the reader, but also break down and explain etymology in a palatable way, make debates on the importance of translation types, and all of it ties back to the theme of communication as a form of connection, or as a form of violence. It was not the characters, or the world, or the plotline that engaged me the most, but the silver-working; the unique mechanics of the magic system underpinning the entire book that set it apart from the rest.

S. by Doug Dorst and J.J.Abrams

Mechanics in novels do not always have to be through the narrative itself. S. by Doug Dorst and J.J. Abrams is a book that's unique through the way you read it. Initially disguised to look like a library book, when you open it there are actually two stories: one through the main body of text, the other through the meticulous annotations by two scholars trying to solve the mystery of the author. You have to distinguish what annotations came first and from who via colour and handwriting types, as well as sift through the handwritten notes they slot in the pages of the book. This in itself is a type of mechanic, and made the book a lot more unique and interesting to read!

House of Leaves by Mark Z. Danielewski

Initially starting as a regular book, you read about the protagonist moving into a new apartment, finding a book left by the deceased man who lived there previously. The book is about a documentary featuring people who lived in a house that find doors appear suddenly, or that their house has dimensions that doesn't quite make sense. Then he begins to notice his own apartment doing the same. And slowly, slowly, the text in House of Leaves begins to warp and wrap on itself, mimicking the nonsensical layout of the apartment. At first you brush it off as a printing error, until they words themselves are spiralling, overlapping – a very unique mechanic that ties itself to the theme well.

The Music Box Paradox

The Music Box Paradox is a novel series of my own creation, built around the mechanic of time-travel, that's intended to be read two different ways to come to two different conclusions depending on reading order. The protagonists of the two books, prequel and sequel, are cursed with prophecy: an affliction where people can "jump" a family generation into the next person that bears the curse. Throughout the novels they are constantly swapping with each other, two separate sides of the same story passed down through history. This mechanic is unique, because it not only transcends the internal time of the book, but also the physical novels. It also gives into the theme of generational trauma, cycles, and transgenderism – and in my opinion more engaging than the tired idea of prophetic dreams.

Generally I have always made my mechanics first, because engaging the player/reader is the best way to make them care about your story, and thereby make your product successful. However while a mechanic is easy to slot into a book, I've found it's a lot harder to apply it to games. Not only is there a layer of physical activity you have to account for, but subverting a specific action in an industry as enormous as videogame production is difficult in itself. This project is going to make a very unique challenge!

Subversive Mechanics in Videogames

Admittedly, videogames don't really hold my attention unless I think there's something new in it. You could have made the most wonderful, soul-shattering piece of art, with stunning visuals and a narrative that won the Nibbies despite being a videogame, but if it didn't contain something new mechanic-wise, then I probably got bored and moved on very quickly. Most modern Mario games feel exactly the same to me, and I only really keep up with most new Pokemon installments out of nostalgia-influenced obligation. I've come to learn not to expect too much from AAA studios whose first priority is profit. But below are three beautiful games with such interesting mechanics I just couldn't put them down.



VVVVV is a puzzle game with a subversive take on the word "jump". Instead of hopping into the air and coming back down, jumping will completely change your gravity. Being a character who must cross a lot of dangerous spike pits, this make the game understandably hard, and often frustrating because it is easy to forget at first about the jump mechanic. Jumping has become so ingrained into most casual players as something easy, something default, that changing this default throws them through a loop. You can't just leap over a pit – you have to find a spot on the ceiling to land on, to then come back down.



Baba is You is an indie puzzle game officially released in 2019, however was originally a demo for a videogame jam in 2017. This is why the game is so sweet, simple, and fun, with an emphasis on mechanics over story or graphics. Baba is You gives the player the freedom to completely change the rules of the game while also giving a clear "win" state – a difficult balance to achieve. You, as Baba, move blocks with words around that will define the mechanics. If the "Baba is You" blocks are lined up, you will be Baba: a tiny, bunny-esque creature. However, if you change "Baba" to "Rock", then "Rock is You", and you will no longer control Baba; you will control the rock. You can change the win state to something you think will be easier (eg; Flag is Win to Baba is Win) – and you can even reach a game over if you accidentally push a block, and make it so you control nothing. The game and puzzle mechanic are totally unique and refreshing to play.



Portal is definitely the most famous subversive puzzle game, pioneering a mechanic that had never before been seen and twisting it into a slow buildup of increasingly more difficult puzzles. Even its game slogan – "thinking with portals" – alludes to its core mechanic. The player is first given one gun, to beam portals into specific surfaces of a research lab. When they enter the blue portal, they will come out the orange portal, and vice-versa. When they are given a second gun to completely control the portals, that's when the puzzles get very difficult. It was completely original and took the world by storm with an additional layer of genuinely amazing storytelling and good graphics. Each puzzle you solved made you, the player, feel smart for solving it – and that's the mark of a very good videogame.

Mechanics as Metaphors



As both a game and a poem (as stated by its creator, Cecile Richard), Novena has a lot of artistic metaphor hidden within it, reinforced by its simple mechanic. All you have to do is return to the shore. Each time you go there is a slight change in weather, but nothing other than that. This could echo stanzas with small changes to the line while the general rhythm is treated the same. Within the narrative, going back to the shore is treated the same as your presence to a long-suffering friend. You don't have to do anything; just being there is enough.

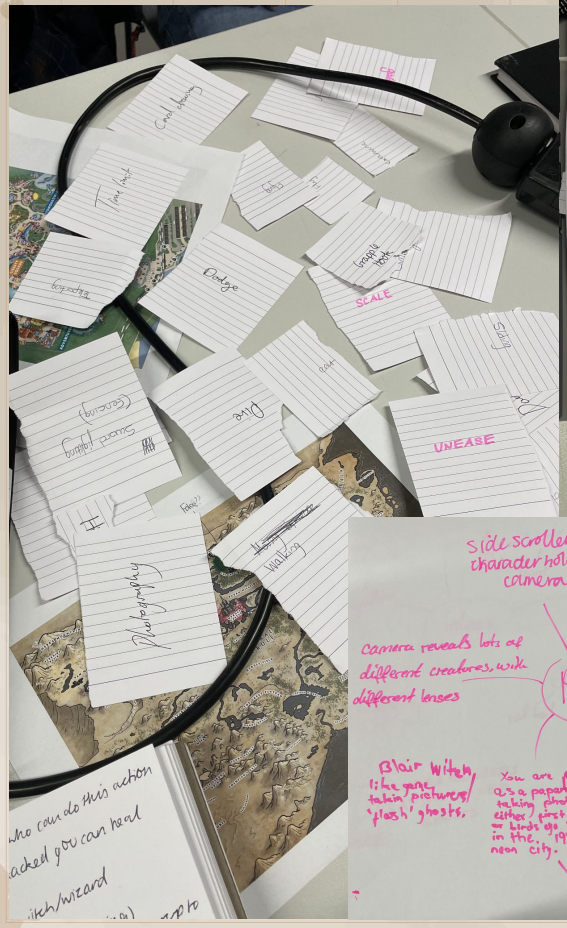


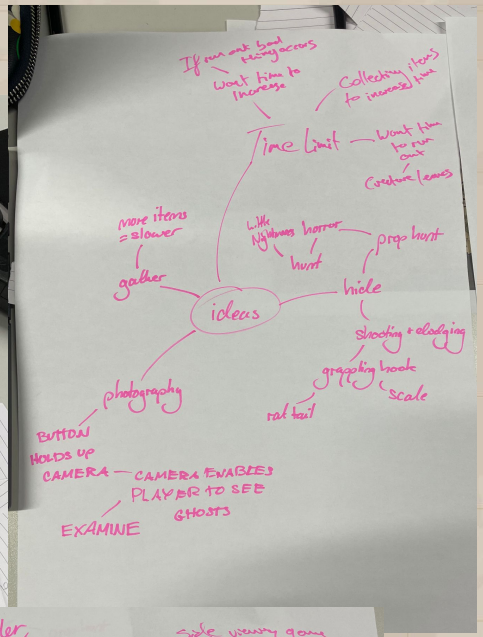
Layers of Fear is a sensational horror game that captured people with its realism and off-beat approach to tension. The metaphor here is in the game's mechanic of guiding you. Instead of unlocking areas of the house to explore as a more traditional horror would, the player character stumbles through rooms that are always changing, flipping the layout of the enormous mansion constantly, serving to confuse and frighten. The metaphor here is that your player character is suffering through a changing state of events. You were an acclaimed artist, with a beautiful, loving wife who had a talent for musical instruments, and an adorable baby daughter. Then, as if in an instant, your gallery burnt down; your wife, caught in the fire, was so badly damaged by it she can no longer play her instruments, and nor is she beautiful; and without your wife to take care of the child it falls to you to take care of a kid who cries constantly and needs looking after. It also reflects your deteriorating mental state. Your drunkness and psychosis are reflected with rooms changing in an instant, hallucinated rats, and hallways stretching to infinity and back.

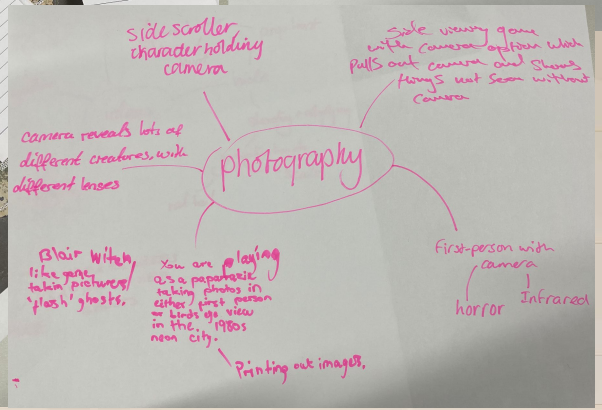


Depression Quest is a deceptively simple choice-based Twine game, created by Zoe Quinn, Patrick Lindsey, and Isaac Schankler. As a metaphor for depression, and how it sucks out all the energy and goodness from you, it presents you with a scenario about your life with a couple of options – only, the best option (usually the one that means you have to open up fully to people, or that take up the most energy) is always struck out. You have to scramble to pick what you think the second-best decision is, only some drain you more than others. You find the more you isolate, the more decisions get struck off, until only the worst, most self-destructive habits remain. However, not all is necessarily lost. Choose better options and better decisions become available. There is always a way to go back and better yourself. The ending you get reflects how well you were able to cope with your depression – however notably, the disability always robs you of that first, best option.

Concept Ideation

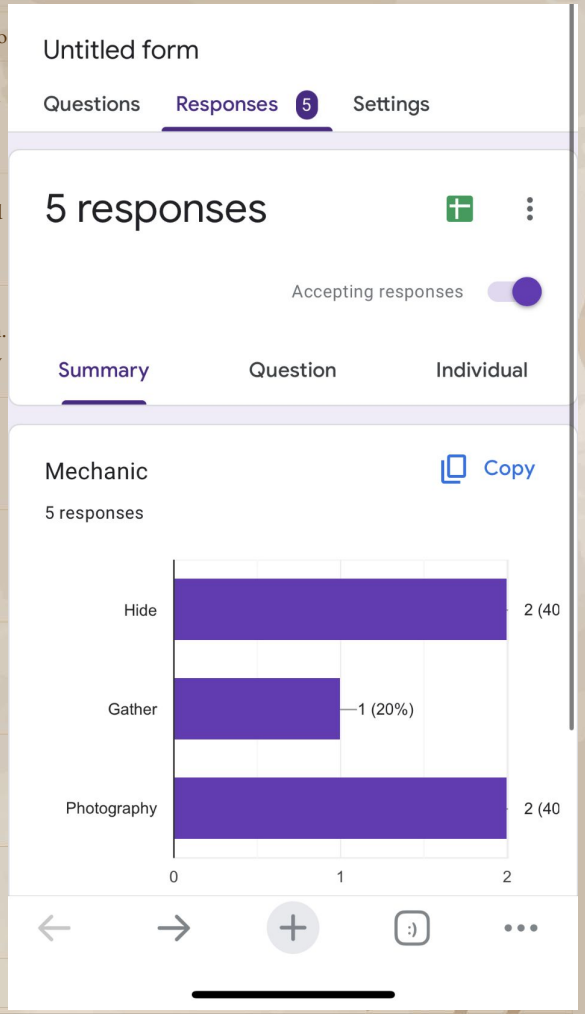






My group used a mindmap to come up with an array of ideas for mechanics we could use, combining mechanics, emotions, and genres to conceptualise potential new games with an invented "card game" done in class. From this we narrowed it down to three main ideas we liked: hide, gather, and photograph. The former two because they seemed simple, and slightly more unconventional than something like "jump" or "run" – and the last because it was completely unconventional, totally unique.

We came down to a vote, and when the vote ended in a tie, a coin flip, which decided photography. However, after we struggled to think of something simple and subversive for photography, quickly changed it over to "hide". We were able to conceptualise and agree on some ideas at this stage. The next slide is a Miro board we used for a virtual mindmap, that we were able to update independently over the week to settle on an idea by next meeting.



Group 1 Mechanics Project: Hide

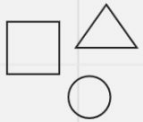
See No Evil, Hear No Evil, Speak No Evil

Horror Game

Chased by Monsters; you must camouflage from them

Audio Monster (Hearing): it can hear you. Camouflage from it by making no noise; stay still

Visual Monster (Sight): it can see you. Camouflage from it by shapeshifting into your surroundings



For the prototype the surroundings can be simple: triangles, squares, circles. Shapeshift into a triangle, square, or circle with a button press.

Tactile Monster (Touch): it can feel you. Camouflage from it by shapeshifting into your surroundings, and staying completely still

Platformer

You are in the foreground, the monsters are in the background.



Alternatively to the Monsters -- you are being watched by an All-Seeing Eye. When the Eye opens, shapeshift into your surroundings

Vertical ascension instead of across?

Group 1 Mechanics Project: Hide

Games with hiding mechanics

- Little Nightmares
- Hitman
  - hiding in plain-sight
  - costumes
- Assassin's Creed
  - slow movement
- dishonored
- Metal Gear Solid
  - creeping
  - ! noise
  - sight lines
- Legend of Zelda
  - stealth potions
- Prophunt
  - becoming objects /hiding in plain-sight

Innovation

- Light vs Dark
  - create shadows to hide in
  - player hides in the light instead of the dark
- Distraction
  - torch
  - local co-op, another player has to make noise/distraction while the other hides
- crouch becomes ceiling sticking, hiding by jumping onto the ceiling
- Stand out/blend into surroundings at specific times



The “Hide” Mechanic

There are many different games that have utilised hiding and sneakery, so in order to know how to subvert it, I looked to other games to examine what they did. Usually hiding is part of the core-meta gameplay, a secondary mechanic, especially with wide-open adventure games. For example in Skyrim (2011), the main controls revolve around fighting and exploration. While stealth is a very popular aspect of the controls, it is not the main control. However, the games below are either heavily characterised by, or the full intention is, sneaking around.



Little Nightmares is a 2017 horror game where you play as a tiny girl in a yellow raincoat, and your whole objective is getting to your destination, and staying out of sight while doing so. As a tiny person in the midst of enormous, horrifying people, you have to find creative ways of keeping yourself hidden in the shadows – in cabinets, under tables, in vents. While there is no specific mechanic to hide, it all revolves around staying in shadowy places out of eyeline of the antagonists, and if you are spotted, it’s game over. This is the most traditional way of the hide mechanic.



Assassins Creed utilises a progressive alert system, in which a metre fills up on your screen, and if it gets high enough, combat begins. What fills the metre are things that will make you more conspicuous. Loud noises, dead bodies, and staying in the light will fill this metre. Additionally, if a guard sees you, you only have roughly one second to hide yourself before combat begins. It’s a very elaborate, unique system that allows the player to know exactly how much trouble they’re in, instead of a one-hit kill if you’re seen. You can even use it to your advantage, purposely using the metre to attract guards you know you’re stronger than.



Metal Gear Solid (1998) was one of the first games to use the hide mechanic in an interesting way – with tactical espionage. Before this game, that aspect hadn’t really been explored. With new mechanics like “creeping” and “sightlines”, its popularity exploded, and has been added to most subsequent games that include a sneak option.

Types of Hiding

However, there are different many types of hiding other than just staying out of sight, and as we began to brainstorm on Miro, I realised that most I hadn't ever seen utilised outside of a one-off gimmick or a minigame – never as a core mechanic.

HIDING IN PLAIN SIGHT:

The term "hiding in plain sight" refers to a way of hiding by not really hiding at all; by blending in over crouching conspicuously behind structures. The best example I can give is from the game Inside (2016) where you play as a little boy, being mysteriously hunted by seemingly the entire world, which has fallen into some strange dystopia. During a couple parts of the game, you're required to stand in a long line of zombie people being monitored by a robot, and act just like them so as not to be spotted. There are multiple exercises of jumping in time with the others; spinning in a circle; and even walking had to be strictly timed and regulated during this portion. You're "hiding" by blending in with the others. We came up with an idea about being a shape, able to blend in with the same shapes.

CAMOUFLAGE:

This idea was mine, and mostly inspired by a Minecraft minigame. There are the "hunters" vs the "hunted", where the hunters are gifted with swords and armour, and the hunted are gifted with camouflage. During the game you can disguise yourself as any block, and affix yourself somewhere inconspicuous: a haybale in a pile of haybales, a furnace next to a crafting table. It requires having to know the map (or hitting random blocks until you catch someone), and was tremendously tense when someone a hunter was investigating around your area – but tremendously fun, too. So what if the player character could camouflage too?

LIGHT AND DARK:

Most videogames require you hide somewhere shadowy. When you want to hide in real life, you'd usually choose somewhere obfuscated by darkness. However, what if you were being searched by something nocturnal? Then you'd be required to keep to the light. Additionally, it would make the dark moments more tense if the player character did not possess nightvision, and only had a hazy idea of when they were being seen. It could even have a "Grandma's Footsteps" aspect with the light turning off and on.

DISTRACTION:

Another way of hiding is to use a distraction, which is a concept we briefly toyed with. You'd have to complete a puzzle within a time limit to set off a noise or a false prey, which would in turn distract a monster. Failure to set it up properly would result in the distraction coming too late, or the noise going off too early, or even not at all.

CEILING CONCEALING:

Most videogames have the player hide by crouching on the floor or hiding under objects. There are less videogames about using the ceiling to your advantage. After all, not a lot of people look up when they enter a room.

The New Concept

In the end, a lot of the ideas we had about subversions in got combined into one. This would come back to bite us, but for now we really liked the concept.

The Mechanics

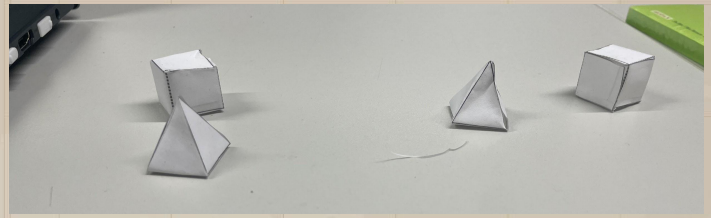
The mechanic is in shapeshifting – our camouflage element. You play as a star, and different button inputs can turn you into either a circle, square, or triangle. Inside the map are colonies of circles, squares, and triangles all fighting for dominance in a rock-papers-scissors style battle (triangle beats circle, circle beats square, square beats triangle), where a square touching a triangle turns the triangle into a square. You must navigate through without being caught by the enemy, or letting anyone know you are, in fact, a star (since there is a time limit for the length you can shift as any one thing). Complete the game and you make it to the end, in a room full of star shapes, and you won't have to shapeshift again.

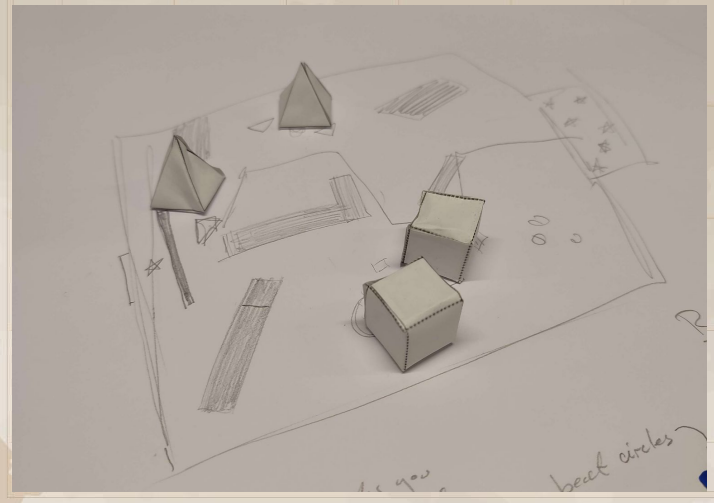
The Metaphor

The metaphor is about adapting to conform in society. Most people alter their behaviour based around the different people they meet, and sometimes people are hostile if you don't conduct yourself in the appropriate manner, so this is a message most people I think can understand. Additionally the star carries connotations of hope, specialness, and positivity, a much-needed mindset if you are constantly trying to change yourself: you're beautiful as you are.

Paper Prototype

The concept ended up being very messy to put on paper, and we realised it would be equally as messy to put into practice, so we began to steer away from the “fighting for territory” idea and more on the puzzle element of camouflaging. Our tutor, Emma Reay, additionally asked how we were going to indicate to the player a puzzle mechanic. From this our concept began to change. Again.*





Starting from the top, you are first shielded by two walls on either side to stop the patrolling squares from immediately seeing you. Squares, we decided, would move in stiff, gridded lines. The yellow zones represent the radius in which the shapes can see you. From here you are protected, and it should be fairly intuitive to stay out of the light zones.

From there you see a smaller shape on the ground (the blue square). Pick it up, and you gain the ability to shapeshift into a square. This means you can safely get past them into the triangle zone.

Triangles move more randomly than squares, but you’re still roughly able to predict what direction they will go in based on what angle they hit a wall. However since squares are predatory to triangles, they will ignore you, and you are not required to go into their zone – however the next zone, circles, ARE predatory to you. Circles move completely randomly and have 360° vision. You will have to retrieve a triangle from the triangle segment before you go forward, without revealing you’re a star. It’s a fairly simple first puzzle that should get the player to grips with all the mechanics necessary to proceed.

*Joe was absent on this day.



C#

During this phase of production, I also realised (after a week of relative inactivity) that we were all pretty passive people, and nobody was going to do much without being "assigned" a job, and we had nothing in terms of a prototype in a proper game engine, or roles. We hadn't elected a leader; most jobs until now had been collaborative or by vote. Despite not being... overly confident, I took conditional initiative and gave people some jobs. I had Esi code a player-tracking movement, Joe (since he seemed the most experienced with code, and told us he had friends who knew C# well) to do some of the shape behaviours, Guy on level design (since he came up with the paper prototype level), and Olivia making the poster for the Arcade display (since she had been the one drawing nice diagrams and pictures for us in our notes/moodboards). Meanwhile I attempted a camera tracking movement and a player movement. I wasn't confident, since I don't comprehend maths and hadn't ever coded before, but both of them ended up working. I was going to attempt the shapeshift mechanic too, when we hit complications.

Camera Tracking Code

C# PlayerMovement.cs × C# CameraMovement.cs ×

```
using System.Collections;
using System.Collections.Generic;
using UnityEngine;

No asset usages
public class CameraMovement : MonoBehaviour
{
    public float FollowSpeed = 2f;  Unchanged
    public float yOffset = 1f;  Unchanged

    public Transform target;  Unchanged
    // Start is called before the first frame update
    Event function
    void Start()
    {

    }

    // Update is called once per frame
    Event function
    void Update()
    {
        Vector3 newpos = new Vector3(target.position.x, target.position.y + yOffset, -10);
        transform.position = Vector3.Slerp(transform.position, newpos, FollowSpeed*Time.deltaTime);
    }
}
```

Player Movement Code

C# PlayerMovement.cs × C# CameraMovement.cs ×

```
using System.Collections;
using System.Collections.Generic;
using UnityEngine;

No asset usages
public class PlayerMovement : MonoBehaviour
{
    public float moveSpeed = 5f;  Unchanged
    public Rigidbody2D rb;  Unchanged

    private Vector2 movement;

    // Update is called once per frame
    Event function
    void Update()
    {
        movement.x = Input.GetAxisRaw("Horizontal");
        movement.y = Input.GetAxisRaw("Vertical");

    }

    Event function
    private void FixedUpdate()
    {
        rb.MovePosition(rb.position + movement * moveSpeed * Time.fixedDeltaTime);

    }

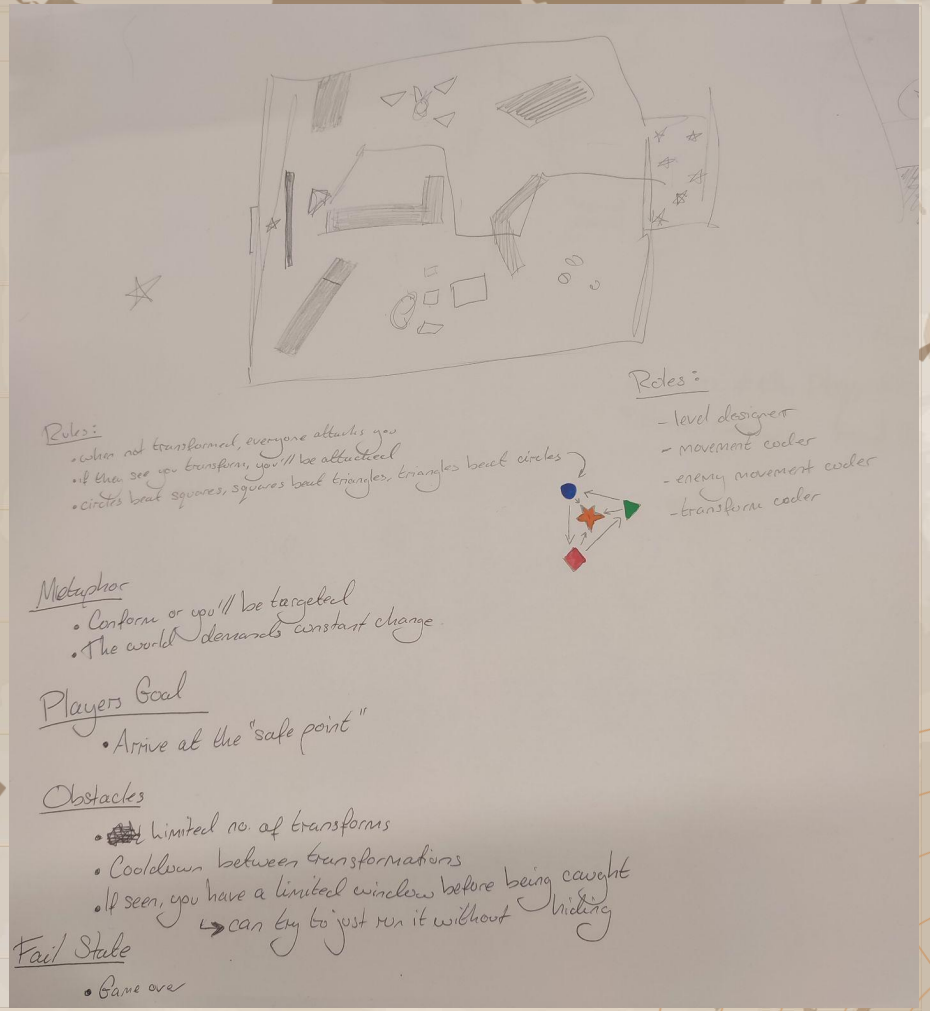
}
```

Complications

The game was too complicated. Much too complicated. While Joe was coding shape behaviours, he realised how complicated it was all going to be, and laid it all out for us. Having “sightlines” was going to be more difficult than we’d intended, and coding got very complicated when there were walls for shapes to bounce off and block views. Most of the way through the timeline, we’d have to start again. Luckily he already had an idea that was both simple, subversive, and, mostly importantly – he claimed it was codeable in a week.

The New Concept (...again.)

The new concept went back to one of the original three mechanics: gather. The player would spawn as a simple circle and collect as many X’s as possible within a time limit. Once your time limit was over, the next player would start. This could either be competition focused, to see who would collect the most X’s, or done as a collective. Joe, Esi, and I unanimously voted for the second option, since it engaged more people to work to one goal, which is a little rarer than being competition-focused. Guy and Olivia abstained from the vote.



Joe's Code

I was a little disappointed that my own code was now void after working quite hard on it (it did not come naturally to me, hard as I tried), (also our research on hiding was now void which was a little irritating), I am very much grateful to him for taking on the job. After 2 weeks he handed over the prototype, and there was only one alteration where, instead of having a player character, it was now point and click.

We had a week left now, which wasn't a lot, and still had to design it. Currently the clickable object to gather was a pixel .jpeg of a pot. We held a meeting that Saturday to decide on design, however only Joe and Esi entered the call. I suggested a simple design of sheep in a field to complete the metaphor, as counting sheep is often what people do to go to sleep.

```
1 asset usage  2 usages
public class GameManager : MonoBehaviour
{
    public GameObject objectPrefab;  Changed in 1 asset
    public float spawnInterval = 2f;  "0.5"
    public float gameDuration = 5f; // Set the total game duration in seconds  "30"
    private float timer;
    private int objectsDestroyed = 0;
    private int objectsCreated = 1;
    [SerializeField] TextMeshProUGUI timerText; // Reference to a UI text element for displaying the timer  Tex
    [SerializeField] TextMeshProUGUI tallyText; // Reference to a UI text element for displaying the tally  Tall

    Event function
    void Start()
    {
        // Start spawning objects
        InvokeRepeating( methodName: "SpawnObject",  time: 0f,  repeatRate: spawnInterval);

        // Initialize the timer
        timer = gameDuration;

        // Initialize the tally text
        UpdateTallyUI();

        Debug.Log( message: "StartFinish ");

    }
```

```
Event function
void Update()
{
    // Update and display the timer
    timer -= Time.deltaTime;
    if (timer <= 0f)

    {
        timer = 0f;
        // Handle game over or other logic when the timer reaches zero
        objectsDestroyed = 0;
        timer = gameDuration;
        // CancelInvoke("SpawnObject");

    }

    UpdateTimerUI();
}

Frequently called  1 usage
void UpdateTimerUI()
{
    // Update the UI text element with the current timer value
    timerText.text = "Time: " + Mathf.Round(timer);
}

2 usages
void UpdateTallyUI()
{
    // Update the UI text element with the current tally
    tallyText.text = "Objects Destroyed: " + objectsDestroyed;
}
```

```
Frequently called  1 usage
void SpawnObject()
{
    if (objectsCreated <1000){
    Debug.Log( message: "SpawnObjectRan: ");

    Vector3 spawnPosition = new Vector3( x: Random.Range(-150f, 150f),  y: Random.Range(-90f, 30f));
    GameObject newObject = Instantiate(objectPrefab, spawnPosition, Quaternion.identity);
    float randomScale = Random.Range(10f, 50f);
    newObject.transform.localScale = new Vector3( x: randomScale,  y: randomScale);
    objectsCreated++;

    CollectibleObject collectibleObject = newObject.AddComponent<CollectibleObject>();
    collectibleObject.SetGameManager(this); // Pass a reference to the GameManager to the CollectibleObject
    }
}

1 usage
public void ObjectDestroyed()
{
    // Called when an object is destroyed
    objectsDestroyed++;
    UpdateTallyUI();
}
```

Sheep Complications



We decided that Esi would design the field background, and I would make the sheep. I wanted this task to see if I could code in any variation to the sheep. Initially my idea was just to make an identical one in red and blue, and get them to spawn in at random for some variety. This task did not end up being something I could integrate, although I did very much try.

I had an uncomprehending look at the code and made a space underneath objectsCreated++; since that was in the functions that dictated the object behaviour. The best way to go about it was to make a folder, and have the code randomise what asset was selected from that folder to spawn. That way I could make more unique sheep sprites, maybe even a whole farm. However, I couldn't make it work. I tried over the next 2 days and failed. My wording was never precise enough on Youtube tutorials to convey what I meant, so I tried making some of it up. Unsurprisingly this didn't work.

My (Attempted) Code

```
string[] assetPaths = Directory.GetFiles(folderPath, searchPattern: ".png);");
foreach )string assetPath in assetPaths)
{
    Sprite assetSprite = LoadAssetSprite(assetPath);

    GameObject newAsset = Instantiate(assetPrefab, GetRandomPosition(), Quaternion.identity);
    newAsset.GetComponent<SpriteRenderer>().sprite = assetSprite;
}
```





Design Wrap-Up

To finalise the game and tie it all together, Esi designed the background, chose the font and tweaked the words around for a proper objective, and even added in her own background music she'd created!



Evaluation

After the first module, I went into the second with cautious confidence. I have worked in teams before to make games on just a week's schedule. Plus it would provide an opportunity to get to know the class better, as people tend to form and stay in their own cliques. And while I really enjoyed getting to know and working with my teammates, in the end what hindered the project the most was exactly what I thought it was going to be: over-ambition and lack of communication.

We spent far too much time coming up with an idea we could use, and even longer chasing an unattainable goal, not self-assigning roles (or assigning others roles) – and that all dragged the project down a lot. I consider myself a passive person. I like having control over my own tasks, but generally dislike to dictate others because I don't want to be viewed as pushy, or rude. Equally I think my other teammates felt the same. It was difficult getting us all on the same page, as inevitably one of us wouldn't be in class that day, or wouldn't messages on the discord server, or turn up for an online call, or didn't use Miro or Jira. Initially I thought having 5 to a group instead of 4 was better, since we had more people to do the tasks. In the end it kind of ended up being a curse.

However, as all these failures bit us from behind, it was actually the most cohesive our little group got; the last few weeks were by far the best in terms of both productivity and communication. We had a sense of camaraderie about our shared mistakes and the pressure caused us to finally stop worrying about each other and divy up the roles to put us at our strengths. We had a sense of relief at having a prototype to turn in, and additionally something that was designed, with music. It was not the best-case scenario. It was definitely a bit rushed. However I intend to learn from these mistakes going forwards. I really, really wouldn't like a repeat of this.

Thank you! :)

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